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ORIGINAL ARTICLES

DISEASES OF THE LACHRYMAL PASSAGES—THEIR CAUSES AND MANAGEMENT

Read before the Monroe County Medical Society

BY LEARTUS CONNOR, A M , M D
DETROIT, MICH

The lachrymal passages are insignificant in size, but their diseases tax to its utmost the resources of surgical art There are few constitutional conditions with which they may not be associated, while the technique of their diagnosis and operation calls for sound judgment and the finest manipulative skill Failure to recognize anatomic deformities or the cause of the lachrymal disease renders futile the highest operative technique, while the most profound appreciation of causation or pathology can not cure without such technique

The study of a million cases, treated in public clinics, shows that diseases of the lachrymal passages form about 2 5 per cent of all eye cases In private practice the proportion is larger, as well-to do people seek surgical relief sooner My records of 7909 cases show that 493, or about one in eighteen, had some disease of the lachrymal passages

The causes of diseases of the lachrymal passages are general and local, functional and organic Notable among general diseases is syphilis By lesions of the eyelids it may evert the puncta, causing epiphora, by lesions of the conjunctiva directly, or indirectly through the iris, it may evert the puncta or obstruct the canaliculi or extend to the sac and cause a dacrocystitis More frequently syphilis induces dacrocystitis by attacking the nose, the duct or adjacent bones This may take the form of periostitis, endostitis or subperiosteal gumma A mucous patch on the wall of the nose over the site of the mouth of the duct may obstruct the flow of tears Purulent dacrocystitis indicates, generally, disease of the periosteum or caries of the bone about the duct The bony wall of the duct may be destroyed by caries or necrosis, the sequestra of the latter calling for removal by operation Gummy growths occur in the wall of the duct and sac, obliterating the passage very rapidly and leading to suppuration Hyperplastic processes of the bones themselves have been known to encroach upon and obstruct the lachrymal passages Gout, rheumatic gout or the state antedating the acute attacks is responsible for many cases of lachrymal diseases attacking the bony, fibrous or mucous tissues here as in other portions of the body Tubercular and scrofulous disease not infrequently invades some portion of the lachrymal passages, as also do the infectious diseases, scarlet fever, diphtheria, measles, typhoid fever smallpox All these and other constitutional diseases may approach the lachrymal passages by first inducing a conjunctivitis or disease of the nose, and so attack the passages from either end or both But a purely local conjunctivitis or blepharitis may cause obstruction obliteration or malposition of puncta, narrowing of the lachrymal canals, inflammation of the lachrymal sac or engorgement of the lining membrane of the duct This obstruction may be temporary as in congestion, or permanent as in stricture, it may be attended with an overflow of tears alone or tears thickened by mucus or pus, or both

In like manner local disease of the nose may cause engorgement of the mucous membrane of the duct and its surrounding plexus of blood vessels, a thickening of the connective tissue, forming strictures, an ulcer may close the duct, a tumor may occlude it, hypertrophies or atrophies of the nares may obstruct to a greater of less degree the current of tears to the nose Finally, defects of refraction may cause, directly or indirectly, disease of the lachrymal passages That these defects do cause conjunctivitis and blepharitis is a fact long since established It is also established that conjunctivitis and blepharitis may cause diseases of the puncta, canalicula and sac, therefore the possibility of eyestrain causing lachrymal disease must be granted Besides, careful observation will show that the strained efforts to secure better correction of optical defects does occasional]y
the puncta from its normal position and so the
overflow of tears or their undue retention wing
tear passages and so favors their decompo ials,
renders them irritating It disturbs the ions
rhythm by which the tears are for ion like the
canaliculi, sac and duct In short, nstant wear-
some cases derange the normal cur if unable to
nose and incite disease of the lach teach him or

It is not true that every case of
lachrymal disease, nor is it true th e treated by
aritis and conjunctivitis, it is or tion, keeping
some cases it has such an effect eir nutitive
years, I have observed that all case nd treating
lachrymal passages had some defect y are asso-
correction of which clearly promote lachrymal
in the milder forms was curative alo naliculi, it

These several causes may induce dis es of lachrymal passages By occluding the cribed It
or part or by displacing it from its ion of the
the eyeball in the lachrymal lake ish little
mucous membrane, by weakening or ge, with
turbing the action of the orbicularis urprised
the elasticity of the sac by engorgeme cases
cular plexus about the duct, by occlusio s, from
end or any portion of the duct by the of the
structures, by ulceration of the mucous r the
or by disease of the bony walls been

All lachrymal obstructions afford the ons
hordes an opportunity to render **the tears** so e
as to extend the existing infl
its character As this proc

then pus or a mixture of tears, mucus and pus results, the sac becomes distended and finally passes into a phlegmon of the connective tissues about the sac, the pent up accumulation finally breaks through the skin and discharges upon the cheek Watching the progress of these events in a patient, we find at first a slight cold, with red and tearful eyes While the redness and constant epiphora soon disappear, slight irritation by dust or wind causes the tears to again overflow, first at long intervals, then at shorter and shorter ones A little swelling is observed at the inner angle of the eye, pressure upon which is followed by discharge of mucus and tears into the lachrymal lake or the nose The intervals between the refilling of the sac gradually diminish until it is almost constantly full Now, after some undue exposure, a swelling is noticed about the sac, red, tender, growing with much rapidity, very painful, often mistaken for erysipelas and finally after great suffering the phlegmon breaks and discharges its mucopurulent contents upon the cheek Unless the natural openings of the sac become free with the reduction of the swelling, the discharges continue upon the cheek causing distressing excoriation, the tears and mucus gather between the eyelids, obstruct vision and finally flow over the lids to the cheek, keeping the eye red and the subjacent skin inflamed If by some accident an abrasion of the corneal epithelium occurs the malignant germs enter and take possession, causing corneal ulcers, abscesses or even iritis Neglect of these, equal to that of the lachrymal passages, is followed bv great crippling of vision if not entire loss

It will aid an intelligent management of these cases to bear in mind a few points relative to the structure functions of the lachrymal passages They begin the puncta of the upper and lower lids, continue rd to the sac, thence through the duct to the The puncta are hardly larger than the point of and held firmly against the eyeball, within the ke The canaliculi starting from the puncta cularly to the edge of the lid for a little, d pass horizontally inward to the sac, nerally enter by a common canal They pavement epithelium on basement mem- ded by connective tissue and muscular ts from the orbicularis The sac is umnar epithelium, as is the duct, resting membrane, and this upon an elastic wall, e lachrymal fossa and partially covered nal ligament, which alternately compresses the sac The mucous membrane of the that of the sac, but surrounded by a rich lood vessels and the whole encased within and opening into the floor of the nose, e lower turbinated bone Its membrane into folds at its mouth and at junction sac, which may easily be injured by careless The canaliculi are narrowed at the junc- he horizontal portion with the sac and the icular As the tears emerge from the conval and lachrymal glands they are swept along yeball by the closure of the lids toward the lachal lake, being set back from the inner commissure the caruncle The contractions of the orbicularis w force the secretion through the canaliculi into ne sac, the latter by suction caused by its elastic rebound from previous compression aids in the movement As the eyelids open the sac is compressed by the internal ligament and the tears pressed into the duct, whence they pass to the floor of the nose Doubtless this is aided by the weight of the fluid, by capillary attraction and possibly by syphonage In any given case the problem presented is to secure a permeable lachrymal passage with smooth lining membrane, puncta pressed against the eyeball in the lachrymal lake and normal muscular action and elasticity of the sac The forces propelling the tears through the lachrymal passages are muscular action and sac elasticity In the management of a case of lachrymal obstruction

1 All eye strain should be removed, from either refractive error or loss of muscular equilibrium

2 In all stages of every case much aid can be secured by the systematic local application of hot water, because of its convenience a tumbler is employed Filled with hot water it is so placed that the entire eye is immersed within its contents Varying with the effects called for, this application may be made for from ten to fifteen minutes every hour, or less frequently The water must be as hot as the skin can bear without scalding Thus used, hot water contracts the vessels with flabby walls, securing a more rapid current of blood therein, allays irritation, is a powerful aseptic and antiseptic and promotes repair of the diseased tissues, even within the sac and duct To the water may be added any aseptic drug, as boric acid, and the conjunctiva washed therein by winking the eyelid

3 In the earlier stages of lachrymal disease, the regular and systematic helping nature to empty the sac, using an aseptic solution to refill it, is attended with excellent results It promotes a more nearly normal current of fluid through the passages, aids in restoring the lost elasticity of the sac, improves the tone of the orbicularis, reduces the engorgement of the mucous membrane and cleanses it of debris Gould suggests the following method The patient is placed in a reclining position, with the head thrown back and toward the side opposite the eye to be treated, in such a manner as to form a basin in the corner of the affected eye This basin is filled with a solution of boric acid or other aseptic solution, and the forefinger alternately presses and relaxes the sac, practically pumping the fluid in the basin through the lachrymal passages This should be done three or more times daily, for from five to ten minutes, according to the indications in each case This is expected only to reach functional and inflammatory derangements, though if practicable it will benfit organic lesions

4 For purposes of diagnosis and treatment, syringes with tips small enough to readily enter the puncta, are of value There are many forms of these, but Anel's is most commonly employed When the canaliculus is so opened as to admit of passing a fair-sized probe through the duct, de Wecker's canula probes may be used Being introduced as is the probe, the style is withdrawn and a syringe attached to the upper end and the fluid passed through the passages A syphon or fountain syringe may be attached and medicated or hot water forced through the passages to any desired amount, an advantage over the small syringes that compel removal with the discharge of the contents of one barrel, and a reintroduction, which is more or less painful

5 In all cases the puncta should be examined with minutest care If an eyelash be found within, it is readily removed with forceps, if a concretion or other foreign body be engaged in the perpendicular portion

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of the canaliculus, it is removed by dilating and manipulation, or this failing, by slitting the puncta If the puncta be permanently everted, the perpendicular portion of the canaliculus must be divided on the inside A fine pointed scissors readily does this little operation Should this fail a bit of conjunctiva is removed from the base of the vertical cut, and if this fails the canaliculus must be divided The end sought by these operations is to secure apposition of the outer end of the canaliculus to the eyeball, within the lachrymal lake If the puncta is partially occluded it must be dilated, if it is closed it must be opened, best by the canaliculus knife when the edge of the lid is placed upon tension by being pulled outward

6 If there be reason to suspect stricture of the
analiculus, its location is decided by passing a lach-
ymal probe through the canaliculus to the sac A
mall probe, No 2 Williams' or Bowman's, is taken
n the right hand between the thumb and finger and
he patient's head steadied against the operator's
hest The forefinger of the left hand draws the
dge of the lower lid outward and downward so as
make the canaliculus straight and tense The
oint of the probe is inserted vertically in the puncta
nd when fairly entered, turned horizontally in the line
ith the canaliculus With gentle, firm movement
is moved along till it meets the hard resistance of
e inner wall of the sac If there be resistance, as
own by wrinkling of the skin about the canalicu-
s the probe is withdrawn a little and then moved
rward in a slightly different direction, a maneuver
hich may need repeating many times before a tight
ricture be safely passed Care must be exercised
ot to push the probe through the canal wall at the
le, rather than through the stricture In this man-
r, by using one probe after another, the stricture
ay be definitely located and dilated

If after the sac is entered it be desired to explore
e duct, the handle of the probe is raised while its
int is kept against the inner wall of the sac, until
has reached a vertical position, the direction of the
obe being toward the wrinkle at the ala nasi,
en it is moved gently but firmly downward till the
or of the nose is reached The same care must be
rcised in passing obstructions as in the canalicu-
Here also we may use probes of varied sizes
shapes, as the case may call for, in diagnosis or
tment In no operation is gentleness and con-
nt care more necessary than in the probing of the
rymal passages One must have such self-control
wait, if failure attends the first effort, until swell
has been reduced or the exact twist of the pass-
ascertained It is easy to make false passages at
entrance to the sac, at the opening of the duct,
farther down to denude the bone It is easy to
k through the lachrymal bone at the floor of the
t and otherwise do such damage as shall make
further management of the case extremely diffi-
and disappointing

any strictures may be managed by dilatation with
es of various sizes, in addition to the treatment
dy described, but most of those coming to the
eon are of such long standing as to require a
ion of a portion or all of one or both canaliculi
operation is done as follows A probe pointed
knife as Weber's or Agnew's is taken in the
as was the probe, the patient and operator occu-
the same positions The lid is placed upon
h in the same manner and made to enter the
puncta as was the probe The edge of the knife is turned slightly inward so that the incision shall lie in contact with the eyeball in the lachrymal lake, and then pushed inward, as was the probe, to the hard inner wall of the sac The knife is now lifted to a position more or less near the vertical position, and as is called for by the amount of the canaliculus, desired to be divided, it is then drawn outward cutting through the thin wall of the passage If it is desired to divide the stricture at the neck of the sac or within the duct, the knife is raised to a vertical position, as was the probe, and guided into the duct and pushed through the stricture If freer division is called for the blade is withdrawn a little, turned partially about and again moved through the obstruction

The probes employed for dilating lachrymal strictures are numerous The first were introduced by Bowman, and they still retain their hold upon the profession, for general uses they have never been excelled They range in size from 1 to 8, are made of silver sufficiently stiff to retain any given form, and malleable enough to admit of being molded into the form of the canal under treatment Williams introduced bulb pointed, flexible-shank probes, adapted to feeling their way about obstructions whose exact location is undetermined, with pleasing facility Their sizes have the same range as those of Bowman Other probes, as those of Theobald, are of sizes reaching to that of the bony canal, or as Weber's conical, the end of the cone being at the point, so that many sized probes are united in one While I have used every variety, the ones best suited to ordinary cases are the Bowman and Williams probes

To keep open dilated strictures, styles are used They are left in place constantly, except at the time of cleansing or altering the size They are introduced as probes and of such length that the tip may be at the floor of the nares and the head just outside the sac, with such enlargement as admits of easy grasping for removal Silver and lead are favorite materials, as these metals are little acted upon by the secretions It has seemed to me that their use was much like the treatment of urethral stricture by the constant wearing of sounds In place of these styles, if unable to keep the patient under observation, I teach him or some of his family to pass the probe

Cases of mucocele or dacro cystitis are treated by opening the lachrymal passages by operation, keeping them dilated by probes, promoting their nutritive activities by means already described, and treating the constitutional diseases with which they are associated If it be impossible, in case of lachrymal phlegmon, to enter the sac through the canaliculi, it is best to open it between them Even cases of lachrymal fistula recover by means already described It is granted that cases of excessive destruction of the mucous membrane lining the canals furnish little hope of securing a permeable smooth passage, with an elastic sac Yet one is often agreeably surprised by the excellent results of most unpromising cases

If permanent occlusion of the duct occurs, from unremovable conditions, and the suffering of the patient demands, the sac may be destroyed, or the lachrymal gland removed, or both It has never been my fortune to meet a case calling for such operations In no case should the constitutional condition of the patient be overlooked In syphilis specific treatment cures many cases without operations In cases of gout or gouty rheumatism, local treatment without constitutional, is unsatisfactory In cases of infectious disease, the general treatment will not be forgotten

In general it may be said that if treated in the early stages disorders of the lachrymal apparatus result satisfactorily, if later, the chances of satisfactory results rapidly diminish, and at the last some are failures in spite of the best directed medical and surgical skill Illustrative of certain types of lachrymal diseases are the following brief abstracts of cases

N H aged 6 years, on recovering from scarlet fever was attacked with inflammation of the left lachrymal sac and surrounding cellular tissue The tears constantly discharged themselves on the cheek The pain was intense The swelling when first seen, was as large as a small egg and exquisitely tender, red and hot The mother said that the tears began to overflow soon after the onset of the fever and had rapidly grown worse Under chloroform the sac was opened, through the lower canaliculus and the pus evacuated, the cavity cleansed with a warm solution of boric acid, and poultices applied when the hot water could not be used The relief to the child was prompt and the treatment soothing In about four weeks the swelling had entirely disappeared and the lachrymal passages pervious

General R, aged 68 years, sought relief from an annoying epiphora of the right eye of long standing Mucus and pus escaped with the tears, causing an inflammation of the cheek, blurred vision, etc He was an old sufferer from rheumatic gout Strictures were found at the junction of the canaliculus with the sac, at the entrance of the duct into the sac and at its lower extremity, and much bare bone between There was considerable bare bone at the inner and upper portion of the external meatus of the right ear, showing that the constitutional disease was not limited to the lachrymal duct The canaliculi, both upper and lower, were divided to the sac with the strictures therein, and at the same time the strictures of the duct. The passages were kept open with suitable probes, and as aseptic as possible by measures described, and the local and general nutrition promoted by exercise, diet and mineral baths The recovery was perfect in about eight months, the bare bone having become entirely covered with a smooth membrane

Mrs F P, aged 25 years, had suffered from red weeping eyes many years, rendered much worse by exposure to wind, cold or any irritant Examination showed half a diopter of hyperopic astigmatism with the rule in each eye This was corrected, the patient directed to soak her eyes in hot water for ten minutes, each eye three times daily, and to irrigate the lachrymal passages with a saturated solution of boric acid after each soaking In two months the patient reported complete recovery

Mr J B, aged 35 years, desired relief from a watering and stickiness of the right eye The lachrymal sac was found moderately dilated, so that pressure upon it caused a flow of its contents from the puncta and into the nares Examination revealed a stricture at the junction of the canaliculi and duct with the sac These were divided and treated by dilatation, with perfect recovery in four months, the sac having fully regained its elasticity, an essential condition of a good result, because the mechanism of the passage of tears through the passages depends very largely upon that elasticity

Mr S, aged 28 years, a molder, was attacked by lachrymal obstruction in the tertiary stage of syphilis The progress from simple epiphora to mucocele and dacrocystitis was very rapid After reducing the acute inflammation, by opening and aseptic cleansing, the strictures at the junction of common canaliculus with the sac and at the opening of the duct were divided Bare bone was found throughout most of the duct He was placed upon large and cumulative doses of iodid of potassium, and the passages kept as aseptic as possible and fully dilated by probes Recovery was complete in about a year, the passages becoming lined with a smooth membrane At first visit the necrosed turbinated bones were removed.

CONCLUSIONS

1 Among the predisposing causes of diseases of the lachrymal passages are such defects of structure as flattening of the bony canal or other irregularities, and defects of refraction

2 Syphilis, gout, phthisis, scrofula, or any of the infectious diseases may cause lachrymal disorder

3 Among the local causes are conjunctivitis at the upper end of the lachrymal passage, and nasal disease at the other end, the morbid process in either instance spreading to the canal nearest

4 The management of any case will never overlook the bearings of any constitutional disease, especially does antispecific treatment furnish gratifying results

5 All defects of the refraction should be corrected under a mydriatic and muscular equilibrium assured

6 Diseases of the conjunctiva and eyelids, as well as all nasal disease, should be removed

7 The treatment of the lachrymal passages with aseptic solutions through small syringes, or the forced washing by Gould's method, and the systematic external use of hot water, contribute to better results in all forms of these disorders

8 The puncta should be rendered pervious, and their position against the eyeball assured by local treatment if possible or, this failing, by operation, so that the ends of the canaliculi may be fully within the lachrymal lake

9 Strictures should be located by probes and either dilated or divided by instruments, the extent of the operations depending upon the nature of each special case

10 Cases treated early in the disease give uniformly good results, those attended with large destruction of tissue are less hopeful, the epiphora often remaining in spite of treatment, but they are protected against the danger of future attacks of dacryocystitis

103 Cass Street.

THE MORBID ANATOMIC EVIDENCES OF THE LYMPHATIC CONSTITUTION IN IDIOPATHIC EPILEPSY

Remarks accompanying a demonstration of specimens before the Chicago Pathological Society at its annual meeting, May 9 1898

BY A P OHLMACHER, M D,

Director of the Pathological Laboratory of the Ohio Hospital for Epileptics

GALLIPOLIS OHIO

This opportunity of demonstrating before the Chicago Pathological Society a series of specimens illustrating some recent studies upon the morbid anatomy of epilepsy is one for which I am grateful, and it is a pleasure to thank my friend, Dr Hektoen, and his associate, Dr Le Count, for their kindness in according me the privilege of bringing to your notice a subject in which I am intensely interested, and one which, since it involves the intelligent examination of gross pathologic objects, seems especially adapted for presentation before a society composed of experienced pathologists Not to overstep the bounds of propriety incident to this particular meeting I shall endeavor to condense as much as possible what seems necessary to say in explanation of the objects submitted to your inspection

In the course of an investigation into the pathology of epilepsy, carried on since last July at the Ohio Hospital for Epileptics a series of uniform and hitherto undescribed conditions have been found at autopsy in certain cases of epilepsy, and it is to these particular conditions that your attention is respectfully invited

It is scarcely necessary to remind you that no constant gross or microscopic lesion has been discovered in epilepsy, especially in what we might style "pure' epilepsy, or "primary" epilepsy, or idiopathic *grand mal* This may, in part at least, be due to the fact that attention has too exclusively been concentrated upon the central nervous system to the neglect of the body as a whole, and that too much weight has been laid upon changes in the brain which are doubtless of a secondary character, due to the action of some extrinsic cause This poverty as regards somatic details will be fully appreciated by anyone who searches the literature of epilepsy with the desire of obtaining postmortem records in which the data has been determined with that exactness and fulness demanded by modern pathologic research

It was precisely this condition of affairs that led us, on commencing our work, to look with especial care to the gross and microscopic pathology of the cases which came to autopsy, in the hope that the data carefully gathered and reliably recorded would ultimately furnish statistics from which conclusions could be drawn, and that eventually there might be established what has always been lacking as a foundation for the study of epilepsy, and what is fundamental for the rational study of any disease, viz a morbid anatomy

Eighteen cases have been examined postmortem since this work was inaugurated, and in eight of these cases some distinctive features were met, which, from their comparative constancy and singularity were regarded as more than accidental occurrences These eighteen cases represented various types of epilepsy and the insanities accompanied by epileptoid phenomena The findings at autopsy naturally varied widely in these cases as would be expected from their clinical diversity The details with reference to the first six of them were recorded in the *Bulletin* issued by the hospital last January, and in another publication, to be ready in a short time, the full account of the eighteen cases will be given

So far as the clinical side is concerned it is important to note that these eight cases include all of the examples of typic idiopathic *grand mal* which have thus far been examined at postmortem The patients were all young adults, varying in age from 17 to 35 years All of them, except one, suffered with epilepsy from childhood Four of them had periodic epileptic mania One man died from maniacal exhaustion, one committed suicide, two women and one man were found dead in bed after having retired in apparent good health, which is to say (and this should be emphasized), that out of the eight cases there were three instances of sudden death, in at least two of which no lesion to account for the abrupt ending could be found

The gross pathologic anomalies in these eight cases, which are illustrated by the specimens to be submitted for your examination, may be summarized as follows A persistent, enlarged and apparently active thymus body, a pronounced hyperplasia of the intestinal and splenic lymph-follicles, a more or less marked hypertrophy of the lymphatic glands, and of the lymph-adenoid follicles of the the tongue larynx, trachea, esophagus, tonsils, and even of the stomach, a narrowing of the arteries an abundant development of fat, an enlargement of the thyroid and certain osseous changes indicative of old rickets Not all of these abnormalities were present in a single case, though the persistent thymus, with one or more features added, was constant With the specimens before you it will not be necessary to enter into minutiæ of description since you will readily recognize the thymic body, the enlarged follicles, narrow arteries, etc

Taken collectively, these morbid anatomic conditions make a picture of what the German pathologists style the "lymphatic constitution" The evidences of the lymphatic constitution have been noted for a number of years in connection with several diseases, but never, so far as I can determine, have they been described in connection with epilepsy

There are two morbid conditions, accompanied by a more or less perfect picture of the lymphatic constitution, which seem especially important in relation to what we have found in our epileptics One of them is laryngismus stridulus, or more exactly, what the Germans style "thymic asthma," which is well known clinically, and which is often responsible for very sudden death in the infants affected The other condition is sudden death in apparently healthy adults with no assignable lesion, and in whom only the persistent thymus, with other evidences of the lymphatic constitution, is found at autopsy It is impossible to discuss these extremely interesting morbid states in the time at our disposal, and it must be sufficient simply to emphasize the fact that the morbid anatomy of the lymphatic constitution is peculiar, not only to these conditions, but, apparently also, to at least certain cases of idiopathic epilepsy Of this morphologic analogy there can be little doubt, and in the report upon four of our cases in the January *Bulletin*, arguments were advanced for defining a clinical as well as anatomic analogy between thymic asthma, thymic sudden death, and epilepsy

What the significance of the lymphatic constitution is, in its relation to thymic sudden death, is not at all clear, although numerous hypotheses have been called into account, and this is precisely the case in relation to our own work where this peculiar anatomic picture has been shown to occur in certain epileptics Without resorting to pure speculation the present state of our knowledge in relation to the lymphatic constitution prohibits an explanation, and since speculation has played too exclusive a part in the attempts to account for that mysterious malady, epilepsy, we propose to refrain from indulging in this very tempting pastime

With this naturally very much condensed introduction, which will, I trust, make them more intelligible, I beg to submit the specimens which illustrate the persistent and hyperplastic thymus the intestinal and splenic lymphatic hyperplasia the narrow arteries, the hypertrophied lymphatic glands, and the excessive development of fat, which were obtained from three of the eight epileptics, all of whom presented the typic picture of the lymphatic constitution at autopsy

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CEREBRAL SYPHILIS AND SOME OF ITS MENTAL ASPECTS

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The complicated manifestations of brain syphilis, when given their proper interpretation are of the utmost value to the student of scientific medicine

Nature, working in her own laboratory with its marvelously delicate adjustments and contrivances, is continually performing a series of brain experiments which infinitely surpass those performed by man with his crude and clumsy technique

The syphilitic neoplasms are of such an ephemeral character, coming and going, here today and there tomorrow, that they frequently give us the opportunity to study in one and the same case all of the kaleidoscopic and complicating phenomena of focal and diffuse, destroying or discharging lesions, present simultaneously or successively It is just this lack of order, this protean appearance and disappearance, which is characteristic of the phenomena of cerebral syphilis So we may meet with cases which up to a certain time have shown signs of focal involvement only, and then develop suddenly symptoms of syphilitic melancholia, hallucinatory insanity or dementia, or, on the other hand, we may meet with cases which have shown for a long time only the mental phases of cerebral syphilis, suddenly develop hemiplegia and ataxic aphasia in an apoplectiform attack Again, we meet with cases in which the history and examination show the presence of focal and diffuse, destroying and discharging lesions side by side and complicating each other The lesions of cerebral syphilis are either osteal, meningeal or cerebral, but only those tissues of mesoblastic origin are involved *per se* by the luetic process

When the bones of the cranium are affected, we either find a simple sclerotic or gummatous periostitis There may be a gummatous osteomyelitis and the inflammatory atrophy of Virchow (caries sicca) When the dura is involved we have to deal with a pachymeningitis externa or interna combined with a gummatous meningitis The gummata occupy by preference the processes of the dura More usually gummata are found in the subarachnoideal space hey are whitish-red, grayish or grayish-red masses ey are diffused or circumscribed, but are never arply demarcated from the neighboring brain subance, which is usually in a state of white or red softening They undergo caseation from the center to the periphery, slowly becoming changed into yellowish masses On the convexity of the brain they cause adherence of the meninges to each other and to the softened brain tissue At the base adhesions are rarer, and usually instead of gummata we find a gelatinous grayish exudate, similar in extent and appearance to that of a tuberculous meningitis If the syphilomatous mass is absorbed there is left a thickened cicatrix It is rarely or never that we find gummata in the brain substance proper without any anatomic connection with the meninges We often meet with diffuse encephalitis, more particularly of the cerebral cortex

One of the most important lesions of cerebral syphilis, one that does most damage to the circulation and nutrition of the brain, is that form of endarteritis first described by Huebner, which involves largely the endothelium of the interna along with an exudate of leucocytes from the vasa nutritia which together form a new growth, ultimately obliterating the lumen of the vessel affected Those of the base are usually involved and especially the arteries of the fossa of Sylvius and corpus callosum Softenings are naturally produced in the areas supplied by these obliterated arteries This more particularly is found in the nucleus lenticularis and caudatus The cranial nerves are also often affected through the shrinking of basilar exudates.

It is claimed by some authors that no definite lesions can be found postmortem in some cases of cerebral syphilis There may be some truth in this and we think it is especially so of those cases of brain disturbance which sometimes occur in the earlier stages of the disease The writer recalls two cases of syphilitic coma occurring before and during the first cutaneous manifestations, which can only be explained by assuming the presence of cerebral intoxication, due to intensity of infection Broadly speaking, we can say that that there is a certain relation between the location of the lesions and the resultant symptoms produced by them So can a gummatous lepto- or pachy meningitis produce symptoms of cortical irritation, especially of epilepsy, often accompanied by mental disturbance Occlusion of the larger arteries often produces the characteristic symptoms of syphilitic coma or symptoms due to thrombotic ischemia of cortical or subcortical areas, such as brachial or crural monoplegia, facial palsy, amnesic or ataxic aphasia, etc

A gummatous basilar meningitis gives us an interesting mixture of cranial nerve palsies, accompanied by hemiplegia Alternating hemiplegia of the ocular type accompanied by ptosis is very common in basilar syphilis In fact, ocular palsies are so common in cerebral syphilis that Ricord used to say "*Un paralysie oculaire c'est en quelque sorte la signature de la vérole sur l'œil d'un malade*" Many endeavors have been made to properly classify the syndromes characteristic of brain syphilis Huebner in his classic article, divides them into the following forms Psychical disturbances with epilepsy, incomplete paralyses (seldom of the cranial nerves) and a final comatose condition of short duration, genuine apoplectic attacks with succeeding hemiplegia, in connection with peculiar somnolent condition occurring in often repeated periods and generally at the same time paralyses of the cerebral nerves Lastly, he distinguishes forms with a course similar to that of paretic dementia

Fournier distinguishes six different forms 1, the cephalalgic 2, the congestive, 3, the epileptic, 4, the aphasic, 5, the mental, 6, the paralytic These classifications have both performed splendid service in the study of cerebral syphilis, but we believe that cerebral patholgy has advanced sufficiently to show the relations between certain definite lesions, their location and extent and the symptoms produced by them So we adopt the following classification 1 Syphilis of the base 2 Syphilis of the vertex 3 Syphilitic endarteritis, which can be either basilar or vertical in situation 4 Mixed forms being both basilar and vertical in location and consisting usually of both specific endarteritis and meningitis 5 Meningo-encephalitis corticalis syphilitica There are certain general symptoms common to nearly all varieties of brain syphilis Headache, especially in the earlier stages, is one of them It is dull and diffuse and is worse at night in some cases Sometimes it is referred to the vault, at others to the base of the cranium This is soon followed by insomnia, doubtless due to the continued pain Vertigo develops in many cases and may be complicated with nausea and vomiting These patients are morose and irritable In cases where a syphilitic endarteritis predominates the patient is just in the opposite condition He is drowsy or even stuporous, going to bed early and staying late, those working at sedentary occupations falling asleep at their work. In some cases this state deepens into a veritable coma (Buzzard's syphilitic coma) where the patient can only be aroused by energetic shaking, answers a few questions in monosyllables and on being left alone sinks again into a deep stupor. In some cases the patient is unable to attend to the most pressing demands of nature, such as micturition, defecation, etc. The countenance of the patient often shows a stupid or expressionless aspect owing to the obliteration of the characteristic lines of facial expression. In many cases of cerebral syphilis we have found pronounced cardiac and gastro intestinal irritability and a condition of vasomotor paresis of the cutaneous arterioles. These were especially pronounced in cases where there were signs of cortical involvement.

It is known that gummatous meningitis more frequently involves the base than any other part of the brain. The gelatinous exudate is more frequent about the optic chiasm, the interpeduncular space, pons and oblongata, obscuring and enveloping cranial nerve roots. They become infiltrated with the exudate and often the vessels supplying their nuclei become affected, thus producing a thrombosis and softening of them. The cranial nerve palsies of brain syphilis are numerous, but the optic and ocular nerves are especially involved. It is therefore common to meet with ptosis, unequal pupils, strabismus, etc. as a result of the involvement of the third nerve. Involvement of the optic nerves produces contractions and irregularities of the visual field.

There may be a bi-temporal hemianopsia due to involvement of the chiasm, or a lateral or homonymous hemianopsia may be present. In 100 cases of brain syphilis, Uhthoff found the oculomotor involved 34 times, the abducens 16 times, the patheticus 5 times and the trigeminus 14 times. Pupillary disturbances are found, such as the Argyll-Robertson pupil, loss of both light and convergence reflex and the hemiopic pupillary reaction. Optic neuritis of the acute type is often present. Blindness is present in some cases due to excessive pressure upon the optic tract. Neuralgic pains are met with in the trigeminus area or anesthesia or hyperesthesia may possibly occur.

Loss of smell or hallucinations of smell, and loss of taste or hallucinations of taste, occur from pressure upon the olfactory or gustatory nerves, or irritation of their cortical areas by pressure of the specific exudate, at the base. Facial palsy may result from involvement of the facial nerve. Deafness rarely occurs from affection of the auditorius. The roots of the eighth pair of Willis are involved in some rare cases. In many of the mixed cases there are symptoms of involvement of the arteries of the base, due to a concomitant syphilitic endarteritis, especially of those arteries supplying the basal ganglia, the internal capsule, the motor areas, etc. These symptoms are most usually due to thrombosis. The symptoms are very sudden, the hemiplegias and monoplegias developing slowly without loss of consciousness. Another characteristic of palsies of this kind is their ephemeral character, coming and going as the thrombosis caused by the syphilitic endarteritis increases or diminishes. The hemiplegia of syphilis is usually accompanied by oculomotor palsy of the opposite side. The palsies do not occur simultaneously when they do the presumption is in favor of a non-specific palsy due to a peduncular hemorrhage. The presumption is usually in favor of syphilis when one attack of hemiplegia is followed by another of the opposite side.

Amnesic and ataxic aphasia are often a complication in these cases, and may be due to either arterial thrombosis or gummata in the sensory or motor speech areas. The same may be said of ataxia or agraphia. Symptoms pertaining to the pons or medulla are often due to involvement of the basilar and vertebral arteries. In syphilis of the vertex we have symptoms which are the result of cortical irritation and showing themselves as attacks of Jacksonian epilepsy. Focal symptoms due to involvement of sensory areas, are occasionally met with. An helter-skelter collection of symptoms pointing to other local or diffuse, destroying or discharging lesions of the cerebral cortex, is often met with in cases of this type. The epileptic attacks are often followed by a paresis of a leg or arm or one-half of the body. Aphasia both of the sensory or motor types or types of bradyaphasia are of frequent occurrence in syphilis of the convexity. In many cases the epilepsy resembles the idiopathic type and simulates the types of grand and petit mal. Another peculiarity characteristic of syphilitic epilepsy is that it suddenly breaks out after middle life and so, as Fournier says, when a patient past thirty years of age suddenly develops epilepsy, it is ninety nine chances out of a hundred that it is due to syphilis. *Appliquons-nous a demasquer l'epilepsie syphilitique, à peine sera-t elle connue qu'elle sera guérie* says Yvaren, and there is no truer saying in medical science.

This class of patients are often morose or irritable or even pronouncedly melancholic. They are, in my experience, the only syphilitics who become maniacal. In some cases we have to deal with a marked disturbance of ideation, apperception and memory. The patients sometimes seem to have their volition impaired, suffering in a marked degree from abulia. When these cases are untreated or improperly treated, the fits increase in number, consciousness becomes more and more beclouded until the patient becomes comatose, involuntarily evacuating urine and feces, respiration and pulse becoming more and more feeble until finally death ensues. In this form of brain syphilis as in many others, we frequently find polydipsia, polyphagia, mellituria and even hemoglobinuria. These last symptoms point to involvement of the bulb. Nearly all cases of cerebral syphilis are accompanied by morbid mental phenomena. The patient may merely have a morbid fear of syphilis or he may become a chronic hypochondriac and imagine that he is afflicted with a new disease every day. The psychoses of weakness or depression are the characteristic mental symptoms in these maladies. Stuporous dementia or hallucinatory confusion are often found in the earlier stages of cerebral syphilis. In the last mentioned variety hallucinations of hearing and sight are especially prominent, particularly the former. The patient may imagine that he hears his neighbors and the public in general speaking about his disease, saying that he is rotten that he should be shot, drowned or hung. He imagines that on this account he is worthless, that he should be done away with or that his family are conspiring to do so. In some of my cases auditory hallucinations have been among the most persistent and intractable symptoms. In many cases patients who were formerly very neat and tidy became very slovenly and filthy in their attire and extremely neglectful of all their personal interests In some of my cases I have also noticed a peculiar weak and bleating tone of voice

One of the most characteristic cerebral affections of syphilis is a diffuse disease of the cerebral cortex due to a meningo-encephalitis, the so called syphilitic dementia That is to say that most cases are due to this definite pathologic condition Nevertheless, a basilar gummatous meningitis or luetic endarteritis can undoubtedly produce the same symptoms by constricting or occluding the cortical arteries and so producing a diffuse nutritive famine in the areas supplied by them

Focal and diffuse symptoms are often inextricably mixed The patient may have transitory attacks of facial, brachial or crural palsy mixed with motor or sensory aphasia, agraphia, alexia or word blindness, and all of these may come or go in a random way With these are mingled amnesia, abulia, impairment of association and lack of apperception Somnolence is often present combined with nocturnal headache, made worse by pressure on the skull Vertigo too is often present The patient's capacity for exertion is reduced He is morose and irritable His face has a stupid and expressionless aspect He becomes more and more melancholic and soon develops delusions of suspicion, imagining that every one knows and talks about his disease In some cases suicidal mania develops Hallucinations of hearing, taste and smell are pronounced In the writer's experience delusions of grandeur, such as we find in paretic dementia, are pronouncedly absent in syphilitic dementia Another characteristic is what Erlenmeyer terms the partiality of the defects Musicians lose their nicety of touch, bookkeepers their power of calculating and artisans their deftness Only certain mental functions are harmed and others left intact One of my patients lost his fluency in a foreign language, and his memory for recent events and his volition were slightly impaired As in nearly all forms of brain syphilis, the disease progresses by jumps, symptoms appearing and disappearing and mixing with new ones Pathognomonic of brain syphilis is its course, especially in this form, the disease progressing by jumps Intermissions occur in which the patient is in a state of comparative health or improvement

Ocular palsies are frequent in many cases, as well as the Argyll-Robertson pupil, mydriasis, myosis, ptosis, etc We may have amblyopia, optic neuritis, etc Apoplectiform and epileptiform attacks are common The delusions from which the patient suffers are unsystematized and the disease frequently simulates the phenomena of paretic dementia, for which it is often mistaken by incompetent diagnosticians It can easily be distinguished, however, from paresis by the absence of delusions of grandeur and by the presence of numerous focal symptoms occurring in random order The following phenomena are peculiar to both focal and diffuse forms of cerebral syphilis 1, sudden shifting of symptoms, 2, the predominance of cranial nerve palsies, 3, the multiplicity of palsies along with their coming and going, 4, the loss of particular accomplishments, 5, the concomitant appearance of symptoms due to destroying lesions of various cortical areas, *e g*, left hemiplegia with aphasia or brachial or crural monoplegias, etc , 6, the sudden coming or going of apparently fatal symptoms such as coma, followed by perfectly lucid states, 7, the comparatively rapid termination in dementia In the treatment of brain syphilis there are only two sheet anchors mercury and the iodids The writer uses mercury in the form of an inunction, rubbing in from one-half to one dram daily for a period of about three weeks I intermit this treatment when salivation appears, which can be greatly retarded by carefully cleansing the teeth every three hours I no longer torture my patients by giving them the ordinary iodids of potassium or sodium, for I have never yet seen a single patient who could tolerate the enormous doses of these salts which we find necessary to give in cases of nervous syphilis I find their administration to be followed by great anorexia, headache, malaise, diarrhea, coryza, cutaneous eruptions, etc

But the iodids are necessary in some form, owing to their destructive action upon luetic exudates and their stimulating action upon the lymphatic and glandular systems So, for the last three years I have been using, with most gratifying results, the excellent syrup of hydriodic acid made by Mr R W Gardner of New York

There is no preparation more widely substituted than this by unscrupulous druggists, but in my experience no other preparation has had the same beneficial results It agrees well with the stomach and can be given before meals, when it can best be absorbed It can be continued for a long time without producing symptoms of iodism and yet is just as efficacious as the salts of sodium, potassium, etc Robust patients I am in the habit of putting upon a spare diet in order to facilitate destructive tissue change I also have them drink plenty of water and take a hot air or water bath in order to increase the excretory functions of the skin and kidneys Anemic or weak patients are to have a plain but nutritious diet The use of inunctions should only be resumed at the end of two or three weeks after the appearance of stomatitis The syrup of hydriodic acid I give continuously After a certain length of time I give the patient a tonic course of iron, strychnin, arsenic, quinin, cod-liver oil and hypophosphites and mercauro Half-way measures are of no avail in the treatment of brain syphilis Yvaren has well said that our treatment must be as energetic as the disease The physician should first make sure of his diagnosis, then map out his line of treatment and stick to it with bull dog pertinacity Pursued in such a manner as this, no disease can give more gratifying results in its treatment, than brain syphilis

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TREATMENT OF URETHRAL STRICTURE

BY FREDERICK LEUSMAN, M D
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It is not here intended to speak of the expedients and methods called for by cases of emergency rendered singular by the rarity of their occurrence as well as their complications For all practical purposes we have three accepted forms of treatment Dilatation, electrolysis and urethrotomy

True, we have an Oberlaender, who with a dilator that bears his name dilates the urethra and controls the effect of this procedure with the endoscope, and we have a Tuttle with a dilator of his own There is the famous Guyon, who, with a syringe named after him, and an elongated nozzle, injects medicines into areas assumed to be the seat and cause of the disease More workers with methods and appliances might be mentioned, bound to give some returns in the hands of a thoughtful, skilled surgeon, ably seconded by an obedient patient. But correctly or incorrectly, while these gentlemen are justly classified as authorities in their chosen lines, their practice finds few imitators in the profession, as a whole, either in hospitals, clinics or private practice.

It is curious to retrospectively view some of the remedies and modes used in days gone by, such as slippery-elm tents, horsehair, hydrostatic dilatation, quadrangular sounds, Holt's divulsor, cauterization with potassa fusa.

Henry Thompson narrates an instance in which a surgeon passed a caustic 486 times during six years, seconded by the daily introduction of a bougie, which was left *in situ* for half an hour. The patient, so it was claimed, continued free from relapse. Another case required twenty-two years for cure. E. Home published a case where a caustic had been applied 1258 times. Honor be due to both surgeon and patient. Thielman[1] recommends the internal use of potassium iodid.

Even in these days many efforts are made to cure organic stricture and its attendant symptom, gleet, with internal remedies, injections, gelatin bougies and other hobgoblins too numerous to name. The patient must swallow sandalwood oil, copaiba balsam and other drugs that furnish but little palliation, and certainly no cure, but irretrievably damage the tender cells of the uriniferous tubes in his kidney, and the no less delicate cells of the mucosa lining his stomach. When at last the stomach or kidneys rebel, injections are ordered for a change. That in the nature of things also failing, a small sound is passed, also with no relief, until the patient tires and goes from doctor to doctor, with some kaleidoscopic changes but no cure. Even the bacteriologist, armed with centrifuge, immersion-lens, culture-tube, rabbits and the authority that a position in the laboratory apparently conveys, is unable to draw valuable or practical conclusions by means of his scientific paraphernalia. The patient leaves the bacteriologist entertained and edified but not cured. W. Bruce Clark[2] says: "If we would gain a clear knowledge of the best methods of treatment, we must extend our knowledge of pathology from the museum spirit to the human flesh, which is more than ever possible today by the aid of the urethroscope and cystoscope. What up to quite recently has been a matter of supposition and inference is today often visible to personal inspection. Once a stricture, always a stricture, represents the views of twenty years ago. Rectal strictures of a fibrous nature certainly yield to free division, accompanied by persistent dilatation subsequently, and if large bougies are used for a year, at first daily for ten minutes, and after a few months less often, the stricture disappears and shows no tendency to return, a fact which I have been able to verify on several occasions." The idea that strictures can be cauterized away by means of potassa fusa, etc., is happily antiquated. The benefit occasionally received from such treatment must be attributed to removal of tender spots and the incidental dilatation. The man who treats gleet with injections finds his congener in the man who treats nasal catarrh with washes and sprays only.

Before proceeding to local treatment we must appreciate the necessity to arrive at a thorough understanding of all underlying causes so as to be enabled to direct the hygienic, dietetic, moral and constitutional treatment accordingly. Be on the lookout for complications, and bear in mind the ever-present enemies such as syphilis, tuberculosis, uric acid diathesis, polypi, granulations, in brief, make a wide-gauge diagnosis. Life is too short, opportunities too limited, cases too varied to allow any one man to speak the last word as to what method is the best in a general way. Probably in the nature of things there is no such generally successful and always applicable procedure. The individuality of the patient, as well as his attendant, will reassert itself. Some patients will submit to anything rather than the knife; some medical gentlemen entertain an equally wholesome horror for the keen edge of the blade, while again we meet with the resolute patient who is tired of compromises, and the resolute surgeon with confidence in his art who will cut the stricture. Besides, other considerations frequently enter, which in practical life sweep away all theories and opinions of even the authorities. The very interpretation of the case, the diagnosis, whether or not certain symptoms result from a stricture or not, will frequently be ushered in only after prolonged labor pains. It has been perhaps justly claimed that all the good that ever came out of any of these means is mostly due to the incidental dilatation. The therapeutic or remedial effects of the passage of the sound may be classified as follows:

"1. The allaying of urethral hyperesthesia.

"2. The restoration of the urethral canal to its normal caliber and the absorption of inflammatory products.

"3. By expressing the contents of the suppurating urethral glands and lacunæ, it exerts a curative influence."[3]

Almost all modern authors agree on the value of dilatation and the ease of its application. In accordance with their teachings the large majority of surgeons and physicians in their daily practice dilate their patients' strictures, unless the strictures give rise to difficulty in urination, when, other conditions permitting, the surgeon will cut and the physician still get along with filiform bougies, aspiration, continuous dilatation, rest, heat and baths, eventually bringing his patient's stricture to a caliber that will admit metallic sounds. I will pass over Guyon's irrigations, endoscopic applications and examinations, for they come into play only in the absence of stricture, and in the presence of stricture only when stenosis is complicated by granulations, polypus, chronic localized catarrhal conditions and ulcers that will not yield to the use of the knife and sound.

Strictures that are not organized beyond all hope of resorption will frequently be cured by intelligent and patient efforts at sounding. To do that effectually requires in many cases meatotomy. This little operation I have found has difficulties of its own. We must cut enough, but beware of over-cutting and remain in the center, cutting a part and relying on the bougie *a boule* to tell us whether to stop or continue, seems the safest way. Hemorrhage out of all proportion to the operation is apt to occur primarily or secondarily for a week or more after. The insertion of horsehair sutures for the approximation of the urethral mucosa to that of the glans has been recommended as a preventive measure of this very annoying complication. There is a general agreement that sounding should not be repeated till all the reaction caused by their use has disappeared The interval will thus vary from three to five or seven or more days, depending on the character of the case and rapidity of increase in the size of the sound used The length of time that the sound should be allowed to remain will also vary with this modification, that the oftener sounding seems advisable the less time should they be permitted to remain within the urethra When sounding is done at less frequent intervals, every two to four weeks or so, ten to fifteen minutes duration has proved in the writer's experience not to be any too long a time It is axiomatic to always remove the sound when the pain attendant upon its introduction in place of dying away increases in severity Extreme distention long enough applied, frequently repeated, results in a thinning out of these fibrous bands and finally snaps them to pieces, when they are ultimately absorbed That this result frequently happens and follows the exertions of a conscientious physician assisted by a faithful patient, there can be no doubt The clinical result is meant, and not the microscopico anatomic one that the pathologic anatomist will bring before our vision in instructive serial sections Surgery even of the mildest kind, such as sounding, causes cicatrices of its own Surgery can not be done without cicatrix formation, still surgery in modern times furnishes the greatest clinical results Thus if success attends our efforts at dilatation, if the stricture is gradually melting away, if the symptoms disappear, if recontraction, even after putting intervals of months between the soundings, does not take place, then the physician can claim a cure, and such cures must be frequently obtained if we believe the testimony of the great surgical writers of the day But if in the presence of a well organized stricture the patient is not willing to put in a year or five years' sounding as an experiment as to whether this mode of treatment will cure or not, if, further, in the judgment of the surgeon the case seems one unsuitable for sounding alone, if time is an object and the most rapid way, most promising in results is sought after, if the patient is willing to be treated for one year only, but not ready to carry his sound in his portmanteau and thus carry on treatment to the time of his grave, if the surgeon is aware that a bladder is better off without life-long instrumentation with its dangers of vesical and renal infection, if, further, the patient has been sounded by a half dozen physicians with no relief from symptoms, then under such and other conditions it becomes our duty to cut, by cutting the ring or rings of fibrous tissue at one point we can now introduce properly sized sounds, reach extreme dilatation, get absorption and produce a clinical cure Otis' urethrotome in narrow-caliber cases, preceded by Maissoneuve's instrument, is the best and last device in the progress of evolution It is a combination of dilatation, divulsion and cutting The difficulty of properly cutting a stricture, of dividing the last fibers, will be realized when you test your case ten days later with a bulbous sound of proper size and find a stricture where everything appeared free after cutting ten days before If stricture in such cases be still present, it must be cut again (Otis), you must follow strictured fibers as relentlessly as infection in carcinoma or tuberculosis

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[1] Med. Ztg. Russlands, St. Petersburg, 1857, xiv, 71.

[2] London Lancet, iv, 147-149.

[3] [illegible] Diseases of the Urethra.

Sounding after cutting has to be maintained for one year, once or twice a week in the beginning, and in the end the interval is lengthened to once a month The patient must be informed before submission to the operation that he has to remain under your care for one year, or else his second condition will be worse than his first But if he be a man determined to get rid of a filthy, ennervating affection, he will gladly submit to one year's treatment He is then done with sounding and troubles referable to that part of his economy With aseptic care there is no danger from cutting, no danger at all compared to the dangers incidental to the presence of the stricture An annoying, but, in my experience, never dangerous feature is hemorrhage But given a patient who follows instructions and is no hemophile, the writer has usually controlled all bleeding promptly by means of pressure applied externally and rest in bed with elevated pelvis

Clifford Perry,[4] at the suggestion of Maisch, has successfully stanched the hemorrhage following an incision in an alveolar abscess of a bleeder by the internal administration of calcium chlorid This was given in 1 30 grain doses every four hours, and with magic results Sounding is begun the third or fourth day after operation and made painless by means of cocain anesthesia The urine is rendered non irritating and the nervous system tranquilized by a solution of potassium citrate, and bromid The addition of secale cornutum lessens the disposition to hemorrhage Some patients will attend to their business the next day, but it is a good rule to confine them to their bed or couch for a week or two The average patient is able to be about in from three to seven days

There is no question of choice between internal urethrotomy and perineal section, the latter operation is the only one suitable in strictures posterior to the anterior layer of the triangular ligament Perineal sections should be supplemented by anterior internal urethrotomy if necessary Abner Post remarks "We may consider strictures as to their effect upon life and as to curability of the local lesion A very important point in prognosis is the extent to which the kidneys have suffered, a matter by no means easy to determine in every way Some evidence of their conditions can be gained by careful examination of the urine, noting the quantity secreted and the amount of urea and albumin, even when the amount of pus makes microscopic examination difficult The condition of the heart ought also to be considered, as it is affected by renal disease of varied origin" E H Fenwick has drawn attention to the amount of residual urine in cases of stricture as of value in estimating the damage to the kidneys, by showing the amount of pressure the kidneys have been working against It may be safely assumed that five ounces of residual urine, which is probably near the average of unreleased narrow strictures, would indicate sufficient damage to cause anxiety as to the effect of any intercurrent inflammation or disease, while an amount over ten ounces would make us cautious in operating for stricture by internal urethrotomy and in giving anything but a grave prognosis of the ultimate effects of the constriction The behavior of the bladder in its progress in regaining the power to completely empty itself will teach us much as regards the future course of the case It is a great advantage to perform this operation under the influence of a general anesthetic, for a number of reasons, not the least of which being the opportunity it affords of investigating the rectum and to do such rectal surgery at the same time as the exigencies of the case demand

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[4] The Journal of the Amer Med Association, March 18 1897.

The treatment of electrolysis is carried out mainly by physicians of non-surgical tendencies That it has done good in the hands of such men as Newman of New York, we can have no doubt Failure to obtain results should be charged up, not so much to the method as to the operator This statement applies with equal force to the cutting operation and dilatation without previous urethrotomy We must remember that others may accomplish what we do not, and when we compare methods, we usually are experienced only in one or the other way for the balance, we are compelled to be satisfied with reasoning *a priori* Keyes[5] says "I believe that a strong current is full of danger, both immediately from irritating effect and ultimately from cicatricial effect, and that employment of the negative pole does not prevent this My study of the subject and the experience it has brought me, digested with all the impartiality I possess, led me to state that the allegation that electricity, however employed, is able to remove organic urethral stricture radically lacks the requirement of demonstration The confidence of its advocates that it will radically cure organic fibrous stricture is, in my opinion, due to the combined credulity of the patient and imagination of the surgeon, or to some special but fortuitous act of Providence upon the co-operation of which, in the case of his own patients, the general practitioner can not with any confidence rely "

CONCLUSIONS

1 Dilatation is the best treatment in strictures if it cures

2 Electrolysis is a modified dilatation, it is a good treatment unless contra-indicated

3 Cutting is the cure in non-dilatable cases, and in all strictures at or near the meatus

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THE RECLASSIFICATION OF SOME ORGANIC NERVOUS DISEASES ON THE BASIS OF THE NEURON *

[ABSTRACT]

* Presented to the Section on Neurology and Medical Jurisprudence at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Colo June 7-10 1898

BY CHARLES K MILLS M D

A few neurologic writers have already spoken of organic neuronic diseases, and many views and theories, as well as a considerable terminology springing from the doctrine of the neuron have rapidly been developed

The most important point of the present communication is to direct attention to the fact that the time has arrived for applying the theory of the neuron, or the nerve cell regarded as an anatomic unit in the classification of some of the most important organic nervous diseases, and especially many of those which have been hitherto placed under such heads as system diseases and primary degenerations

In a general way, the diseases to which I shall chiefly refer may be classified under the three heads of *toxemias, inflammations* and *primary degenerations*, but more especially the last In a fundamental sense they might probably all be classed as toxemias, since the chronic scleroses and degenerations, as well as various recognized forms of peripheral and central inflammation are primarily due to a toxic cause, using here the word toxic in its broadest sense

Accepting the classes of toxemias, inflammations and degenerations, many of these would be better grouped as neuronal or neuronic diseases, rather than as diseases of the brain, spinal cord or of the peripheral nerves, as they have usually been designated

Not only do toxic agents resulting in inflammations and degenerations tend to attack special systems of neurons, but not infrequently a selective tendency is exhibited as regards the sensory, the motor, the intercalary, or the association systems of neurons, and more than this, special portions of the motor, of the sensory, or of the intermediate chain of neurons are liable to be attacked in particular instances, while other portions of this particular system escape The facts at our command are chiefly with regard to the sensory and motor projection systems, but the evidence is accumulating that in particular cases commissural, associating and storage systems may also be liable to elected system diseases

The term "system disease" is one which has long been in use in neurology Commonly it has been applied to those diseases of the neuraxis, and especially of the spinal cord, which attack, or are supposed to attack, exclusively certain tracts or regions of nerve fibers or nerve cells having common anatomic relations and physiologic properties It is, however, more scientific and more helpful practically, to consider system diseases from the basis of the neuron, than to regard them as diseases of the cord or of the brain

One point to be strongly emphasized incidentally is that the toxic agents tend primarily to attack systems of neurons as a whole, and not this or that particular part, as the cell corpus, the axon, the collaterals or terminals It is true, however, that the destructive influence of the poisoning agent may be first exhibited, so far as can be learned by the means of investigation at our command, in one or in another portion of the nerve cell

Dr Spiller and the writer have recently made a study of acute ascending paralysis (Landry's paralysis), in the case of a patient who died in the wards of the Philadelphia Hospital[1] A careful postmortem examination was made, this including not only an examination of the organs in general, and of the central nervous system, but also that of some of the motor and sensory nerves The conclusions reached in this study are of interest in connection with the views here presented Both the peripheral nerves and the cell bodies were the seat of extensive degeneration

It has been held by some that in multiple neuritis it is presumable that the poison acts on the entire sensory neuron at the same time, which accords with the views of the writer that in most neuronic diseases of toxic origin the poison tends to attack the neurons elected as a whole

The disease which has so long been known by such names as locomotor ataxia tabes, tabes dorsalis and posterior spinal sclerosis needs, from the standpoint of the neuron, to be presented in a new pathologic light, but I can not review here the recent literature of this sub ject, indeed, this is not the purpose of the present contribution, which is rather to present broad suggestions regarding neuronic classification Using terms as we now commonly employ them, tabes, like other diseases to which attention will presently be directed, is neither purely spinal nor purely neural, neither purely central nor purely peripheral, but it is an affection primarily of sensory neurons or nerve cells, and Langdon[2], with others, has very properly suggested to regard it as a "sensory neuron degeneration" "As a result of predisposition, hereditary or acquired, and the action of a toxin or toxins (left by a preceding syphilis, usually though not invariably), the nutrition of the nervous system as a whole is lowered In certain groups of sensory neurons (muscle sense, iris reflex, optic nerve), the impairment is greater or the resistance of the tissue is less, and in these groups degenerative changes occur"

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[5] New York Med Jour Oct 6 1888

*The substance of this paper was read before the William Pepper Medical Society of the University of Pennsylvania March 11 1898 and before the Baltimore Neurological Society April 20 1898 and was presented to the Section on Neurology and Medical Jurisprudence of the American Medical Association in June 1898 as above indicated Just before sending the paper to the last named meeting I received a copy of a work by J M Gerest entitled Les Affections Nerveuses Systématiques et la Theorie des Neurones 1898 The author of this work takes in many respects the same points of view as the writer

[1] Mills C K and Spiller W G See Jour of Nerv and Ment Dis vol xxv No 6 June 18[illegible] The paper giving the results of this investigation was read at the meeting of the Am Neurological Association held in New York May [illegible]

Tic douloureux and some of the forms of primary degeneration which single out the olfactory, optic, cochlear, vestibular and glossopharyngeal nerves should, in the opinion of the writer, be classified with tabes as sensory neuron degenerations

Let us now, in the development of the same line of thought, turn our attention to some of the well known forms of "sclerosis" and "degeneration"

Most authors still content themselves with describing the pathology of ataxic paraplegia as sclerosis attacking the lateral columns and part of the posterior columns, the posterior root zones usually escaping disease The lesions in the so-called spinal form of hereditary ataxia differ from those of acquired ataxic paraplegia in that the lesions are more extensive and involve the posterior root zone in all regions of the cord, and the whole of the posterior columns except the small region to the inner side of the neck of the posterior cornu, the direct cerebellar tract being also involved It would be better to class these diseases as instances of mixed neuron system degeneration We have in them degeneration beginning both in the sensory neuron systems and in the motor neuron systems, and in the case of hereditary ataxia involving additional special systems

In amyotrophic lateral sclerosis the parts early invaded are the terminals and collaterals of the cortical motor neuron, and later the ganglion cells of the ventral horns Both the direct and crossed pyramidal tracts and some of the systems of short fibers in the lateral columns, as well as the cells of the ventral horns, have been found degenerated in careful postmortem examinations Somewhat frequently in this disease the nuclei of the cranial nerves and the pyramidal tracts in the oblongata and pons are implicated in the degeneration, and in rarer cases this has been traced upward to the peduncles, and even to the motor cortex In extremely rare cases even the cells of the motor cortex have been found to take part in the disease It is not improbable that implication of the entire extent of the cortical motor neuron will be more frequently found when the present methods, advanced as they are, are improved and investigations are more complete The disease is in reality one attacking two systems of neurons, and at least one of the names used as descriptive of it should indicate this fact

Those forms of progressive muscular atrophy, either acquired or embryonal which *presumably* have their origin in the nerve cell, should be classified under the head of motor neuronal degeneration, and then subclassified according to their position and extent Bulbar paralysis should also be classified under motor neuronal degenerations, and subclassified according to the special cranial nerve system involved More or less generalized cranial motor neuronal degenerations would include the different types of bulbar paralysis, and motor neuronal degenerations of special nerves would give such well known affections as lingual atrophy, facial atrophy (here including painless tic), and the atrophic ophthalmoplegias

The so called "primary lateral sclerosis" is something of a stumbling block in our efforts at neuronic classification According to views long accepted, in this affection the lesion is a degeneration or a sclerosis of both lateral columns, usually beginning in the white matter of the lumbar cord and subsequently passing up the cord, but without involving the cells of the ventral horns In other words, according to this view we have a primary degeneration attacking and confining itself to the processes of the nerve cells While this disease has, however, long held its place in the nosology of nervous diseases, only an exceedingly limited number of autopsies *apparently* uphold the pathology above indicated The probabilities are altogether against the idea of a true primary lateral sclerosis, and the cases which present the well-known symptomatology of this affection can probably all be otherwise relegated, as to Erb's spinal paralysis, amyotrophic lateral sclerosis and hysterical spasmodic paraplegia

The application of the theory of the neuron to classification is most readily made in the case of the degenerative diseases, and yet the same truths are applicable to diseases which more rapidly run their course, as overwhelming toxemias or active inflammations In Landry's paralysis the peripheral motor neuron is attacked and largely destroyed In poliomyelitis, both of the infantile and of the adult type, in the polio-encephalitis superior and inferior of Wernicke, and in the cortical polio-encephalitis of Strümpell, motor neuron systems are attacked. Much controversy has taken place as to whether in multiple neuritis the affection is primarily one of the peripheral nerves (that is, of the axis cylinder processes), of the cell bodies, or of both Much evidence, clinical and pathological, is certainly in favor of the view that polyneuritis in many cases is a true peripheral disease, but in many other cases those forms of inflammation which are usually designated as neuritis and as poliomyelitis involve the entire neuron, and not simply the peripheral nerve (in the ordinary acceptation of the use of the word "peripheral"), on the one hand, or the cell bodies in the ventral horns on the other. Those forms of so called polio-encephalitis and polyneuritis which have been most studied are now almost universally conceded to be either of infectious or toxic origin With regard to multiple neuritis it is no new thing for me to teach the involvement of both nerve and cord in a large number, if not in a majority, of the cases Long before the theory of the neuron was thought of, I expressed my belief that in many cases of so called multiple neuritis both periphery and spinal centers were implicated, in other words, as then expressed, we had a concurrence of multiple neuritis and of generalized poliomyelitis in the same case Several recent investigators have shown involvement of the posterior roots and even of the entire sensory and motor neurons both in multiple neuritis and in cerebrospinal meningitis Long ago I also recorded clinical observations on cases of multiple neuritis which eventually became cases of true tabes Cases of poliomyelitis with implication of the peripheral motor nerves are also on record

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[2] Langdon F W Med. Record, N Y, Jan 8, 1898

These diseases are therefore in some cases at least, neither instances of neuritis in a strict sense or of poliomyelitis They are perhaps what might be termed neuronitis and this term has been suggested but seems to have an unnatural sound even to neurological ear

While the facts which point to the importance of reclassifying certain diseases on the basis of the neuron are clear and convincing it is difficult to determine on a simple and practical method of doing this It will probably be best for clinical reasons to arrange these diseases in the first place under the heads of *embryonal* and of *acquired neuronal diseases* and then to subclassify these according to the particular *system or systems of neurons attacked* This subdivision would include (1) diseases of the sensory neuron systems (2), diseases of the motor neuron systems (3) diseases of both sensory and motor neuron systems at the same time (4) diseases of intercalary or associating systems of neurons and (5) diseases in which numerous systems of neurons are more or less indiscriminately attacked The fourth and fifth categories will receive only passing attention in this paper Within these groups an effort could of course be made to subclassify toxemias inflammations and degenerations but this will not be attempted in the present paper and perhaps it would not answer any useful purpose to make the attempt By far the larger number of neuronal affections are perhaps to be classed under the general head of primary degenerations at least with our present pathological knowledge but toxemias and inflammations which do not lead to degeneration are also as I have already indicated, to be included

Every thinking neurologist has felt the importance of having some good method of classifying under some general head the numerous hereditary or family affections The theory of the neuron offers us one of the best methods of doing this The embryonal or family diseases can be classified with some approach to success under the different physiologic systems of neurons Under primary embryonal degenerations of motor neuron systems for instance, such affections as Little's disease, and perhaps other forms of infantile diplegia or hemiplegia, and some of the forms of juvenile muscular atrophy might be grouped, under embryonal degenerations of sensory or of mixed sensory and motor neuron systems might be included Friedreich's ataxia, hereditary cerebellar ataxia, and the common type of syringomyelia and under special forms of embryonal neuronal degenerations could be classed amaurotic family idiocy, so called Huntingdon's chorea, for which Halleck has suggested the name of *dementia choreica*, and even perhaps some of the special types of the insanity of developmental periods

Amaurotic family idiocy is a type of affections in which numerous systems of neurons are arrested in their development, while general paralysis of the insane is a type of acquired disease in which numerous systems of neurons are more or less indiscriminately attacked Hirt, by classifying this disease under the head of general diseases of the nervous system, recognized the importance of taking it from the category of cerebral affections or of ordinary insanities

Provisionally the views expressed in the previous pages might be in part summarized in tabular form as follows

EMBRYONAL NEURONAL DEGENERATIONS

I Sensory or sensorimotor types 1, Friedreich's ataxia, 2 hereditary cerebellar ataxia 3, syringomyelia

II Motor types 1, spastic diplegia (some types, as Little's disease) 2 progressive muscular atrophy (some types)

III Mixed and multiple types 1 amaurotic family idiocy 2 dementia choreica (Huntingdon's chorea) 3, developmental insanity (some types)

ACQUIRED NEURONAL DEGENERATIONS

I Sensory types 1 tabes 2 tic douloureux, 3, primary degeneration limited to nerves of the special senses

II Motor types 1 *progressive muscular atrophy (some types)* 2 amyotrophic lateral sclerosis, 3 progressive bulbar paralysis 4 primary degeneration of particular motor nerves, as of the hypoglossal, facial trigeminal and ocular

For the present it will perhaps be best to place neuronal inflammations and toxemias in a special class, including, 1, acute ascending paralysis (Landry's paralysis) 2 anterior poliomyelitis 3 polio encephalitis superior and inferior of *Wernicke 4 cortical polio encephalitis of* Strümpell, 5, multiple neuritis and neuromyelitis

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HOW DOES THE CAUSE OF DISEASE PRODUCE DISEASE? A NEW INTERPRETATION OF OPERATIVE PRINCIPLES

BY W R DUNHAM, M D

KEENE, N H

The following direction of research was suggested by J M DaCosta M D, LL D in his address before the Association of American Physicians, at Washington, D C, May 4, 1897 "The great advance of our time it seems trite to say, is the ardent study of the causation of disease And often what we consider the cause, may thus be only the consequences of disease The soil and the forces too, are to be studied and critically examined

There has been much written respecting the soil of disease, while it is a new suggestion that we critically study the nature of the forces which present disease phenomena And with such review it may be well to mention that the science mind for many generations has been satisfied with the interpretation, that forces from without, that active medical principles and active causes of disease in addition to active vital forces, have taken part in the operations presented by the living human organism while of recent date the more advanced thinkers deny that supplementary forces can be introduced to operate the machinery of life Such expectancy, however, has prevailed for a long period and will doubtless be slow of elimination until a clear comprehension is developed respecting the nature of the vital forces

A distinguished editor of an American medical journal states, as late as January, 1898 "There is no drug yet discovered, unless it be alcohol, which adds to the forces of the body" But even this one source will be discredited when it is recognized that medicobiologic science is based entirely on the functions and operative principles of the vital force energies Thus in the near future a different operative plan of medical science will be taught in the schools, effecting as great a revolution of ideal *modus operandi* as was experienced in the acceptance of the Copernican interpretation of astronomic plan Therefore, in place of teaching medico biologic science as being based on functions and operative principles, derived from both within and without, this division of natural science will have its recognized first principles beginning with a comprehension of the nature of the vital force agency But in making research for the discovery of such primary principles we shall be required to differentiate between the functions of the several ultimate active divisions, which enigma has never had a pretense of solution from the many teachers of medico biologic science And furthermore, we shall be confronted with high authority alleging that the mind can not grasp the nature and ultimate functions of the vital force agency That distinguished authority, Henry Maudsley, M D, F R C P, states "It is easy to perceive how impossible it is in the present state of science to come to any positive conclusion in regard to the nature of vital force This, generation and generations to come, will have passed to their everlasting rest before a discovery of the secret of vital activity is made" Notwithstanding such statement, the vital force problem as implied in the operative plan of its several ultimate principles is already solved, and is no more difficult to comprehend than the Copernican plan of astronomic science and may be as positively demonstrated The fact is, the cultured mind is so well satisfied with the long accepted interpretation that active principles from without may be introduced to operate the human organism, that little or no desire is experienced for the making of research, for exercising original thought, to discover the operative plan of the vital force function And it is only of recent date that a review of the alleged situation has been suggested

It has always been difficult to eliminate ideal errors of long acceptance, which is most significantly illustrated in the incident, that such entire satisfaction prevailed with the Ptolemaic interpretation of astronomic plan, that it required more than one hundred years to develop a comprehension that any scientific advantage would result from a review of the alleged situation And it is a fact that can be demonstrated, that the medical science mind has committed a far more serious error of interpretation of operative plan than was perpetrated by the ancient astronomic investigator, which lamentable misfortune is not generally known

Says Dr Lionel S Beal, M B, F R C P Lond, F R S, in the London *Lancet*, May 24, 1896 "I am particularly desirous of directing attention to the question of vitality just now because during the past year there have been indications of a change of opinion, and the prospect of obtaining a patient hearing is better than it has been for thirty or forty years Vitality is a distinct force and every pathologic change is directly consequent upon vital action' Rudolph von Virchow, M D, in his address before the International Medical Congress in Moscow, 1897, stated "I freely confess that the seeking of the point at which medicine begins to form a part of biology has been one of my fads, hence I have devoted the last days of my life to establish and spread the idea that pathology should be considered a branch of biology This is natural, but the delicate point is, in order to realize it in a precise manner, how to establish the relations uniting life with disease" A patient research in this direction will certainly reveal to the comprehension that active vital functions constitute all the "active principles" that may operate the living human organism in health and disease Consequently, the doctrine as now taught, that some mysterious active principle is introduced from without in association with the cause of disease, that acts to produce disease, in other words, that forces from without, forces not vital, attack the human organism, is an error of great and serious magnitude Therefore, to understand how the cause of disease produces disease, it will be necessary to first comprehend the special functions of each ultimate operative vital principle, and the co operative working plan for the presentation of the two grand divisions of life activities, voluntary and involuntary, both health and disease being manifested by the department of involuntary activity

To comprehend how the involuntary organism is *set into that special disturbance constituting disease*, we must examine the working plan of ultimate vital functions, normal and abnormal And in seeking the solution of the vital force problem implied in the *modus operandi*, we will consider first the special function of each ultimate life principle, as expressed in the terms, sensibility, instinct, sensation and contractility, and later, the co-operation of said functions

Sensibility, the mind function, relates the individual to the external world and superintends the voluntary acts, using the life principle contractility to execute voluntary motion Among the numerous subdivisions of this department there may be included the ability to think, reason, originate ideas and experience a variety of emotions

Instinct is that life function which superintends all involuntary acts comprised in organic construction and structural repairs, using food material and eliminating waste and foreign material Instinct is a life function but not a mind function, a distinction to be ever recognized, while sensibility is both a life and mind function

Sensibility can not execute the functions of instinct, nor reversely

Sensation is an operative life principle entirely different from the two departments mentioned It is a life function but not a mind function, and is the life principle which relates the organism to the contact world, while sensibility relates the individual to the external world Sensation is a life principle of great magnitude and importance to consider, in fact a department that would require much time to describe, entering into a vast multitude of obscure life problems Among the numerous subdivisions of expressed special functions included in this division may be mentioned taste, smell, heat, cold, itching, pain and all degrees of irritability, which last term includes a great variety of disagreeable sensations Sensation is a life function expressed from relations of contact, and is manifested by the entire human organism, while sensibility is manifested only through the brain

Contractility is the life principle that manifests animal strength and executes motion, and is the vital principle exercised by the mind for presenting voluntary motion, and by the instinct in the presentation of involuntary activities

The foregoing terms, which represent the distinct departments of ultimate operative life principles, are not of new coinage, but have ever been attended with the great misfortune that no practical distinction has been recognized and taught respecting the special function of each department, and their co operation as expressed in the complex affairs presented by the living human organism, while it is not possible to understand the nature of vital force until we first distinguish the difference between such operative functions and determine what each department executes as a life act Thus a knowledge of such functions constitutes the starting point of thought in medico biologic science In other words, we can not explore thought regions existing as transpiring events prior to the manifestation of such special principles of life expression And we must recognize, also, that the nature of vital force is implied in what those functions execute, normal and abnormal

While distinguished authorities allege that the vital force problem is impenetrable, such is not the fact, and this belief is perpetuated because the mind has failed to discover that any practical knowledge may be acquired from a recognized distinction of function, as executed by the four mentioned departments of operative life principles, a department easy to comprehend and demonstrate Consequently, from this omission of distinction the terms sensation and sensibility are used synonymously without any apparent clear idea of their precise application Some text books allege that the skin is the organ of sensibility and the brain of sensation, while the late Thomas H Huxley has committed a similar error in attributing to the skin the function of sensibility and consciousness The function of instinct is also confounded with that of sensibility, and nearly all writers give credit to that life ability called instinct, for the exercise of both voluntary and involuntary activities, and no practical distinction appears to be recognized between instinct and innate intelligence

After the thoughtful mind has made original research and become satisfied that the four mentioned divisions of alleged operative principles really exist, and mean something in each, executing a function peculiar to itself, it will next be important to consider the working plan of co operation, in other words, the *modus operandi* for the presenting of the two grand divisions of life activities, the voluntary and involuntary The following is suggested as the real plan, and is easy of demonstration That voluntary acts are exercised in response to the mind, while involuntary acts are exercised in response to sensations In illustration, sneezing is an involuntary act executed in response to a sensation

The alleged reflex act executed in response to stimuli, or irritation, which language is slightly misleading, represents a similar operation to that implied in the phrase "Involuntary vital acts are exercised in response to a sensation" A sensation is a primary expression of life principle There has been no previous action for its development, but merely a passive contact Thus the term "reflex action" is not the correct language for the best explanation of the event The irritability of a nerve is not an action on the nerve, but an expression of contact relation by the nerve, as a previous condition that may determine whether a physiologic or pathologic vital act is to succeed

The conditions called health and disease are each presented or executed as involuntary acts in response to existing sensations normal or abnormal There are problems in medico biologic science that require a clear mental perception, not the microscope, to effect a correct solution

In accordance with the operative plan of the vital force agency it is to be recognized that the mind directly superintends voluntary activities and indirectly superintends, to a limited degree, involuntary life acts, by developing such special sensations from contact relations as will be succeeded by the kind of involuntary act that it is desired to have established, or set into special operation Consequently, medicine is useful, not because of an associate active principle, but as the means from a relation of contact for the developing of special sensations The idea that medicine acts is misleading, there is no medical power, but medicine causes special sensations in response to which involuntary life acts are exercised

When we comprehend that physiologic acts called health, succeed to normal sensations, and pathologic acts called disease, succeed to abnormal sensations, it then becomes easy of solution as to how the cause of disease produces disease The contact of the cause of disease produces abnormal sensations in response to which pathologic vital action is exercised, and this pathologic act in itself constitutes active disease There is no "active principle" except pathologic vital action associated with disease problems While this interpretation of operative plan may be easy of demonstration, there is something more than intellectual pride to be considered in association with this view of the situation The present doctrine that "active principles" from without may be introduced to operate the machinery of life, opens the door for the ignorant to practice medicine, even to the satisfaction of the large majority who have been thus educated Therefore, it is regarded as of minor importance from whose hands the supplementary powers may be supplied While with a correct theory and general understanding by the lay mind, of the operative plan of medico-biologic science, as is now understood of the general plan of astronomic science, then no intelligent invalid would emyloy a physician who did not comprehend the working plan of the vital force energies

In returning to the consideration of scientific principles it becomes evident that the condition expressed as an abnormal sensation constitutes the intervening situation always existing between the cause of disease and the development of disease as the first change experienced from the departure of health

That ultimate life function expressed in the name of sensation is a department having many complex relations with the human organism, vastly more than can be considered at this time Some sensations are recognized by the mind while many are not, that have direct relations with the involuntary department superintended by instinct Keeping in mind that the involuntary department is set into special activity in response to a sensation, and not from an active principle introduced from without, it may be understood that the cause of disease does not attack the organism, and that all causes including microbes and germs are passive and merely cause abnormal sensations, that condition necessary for the presentation of involuntary pathologic activities, thus there is no warring of forces from without with the forces within

When considering the relation of causes we should also recognize that while many causes are introduced from without, there is a larger number developed within And we should observe a distinction between primary and secondary causes The former may occasion a disturbance which in itself, later develops a great variety of secondary causes for the continuance of disease Such causes may exist as pathologic fluids which may undergo chemic changes having most virulent relations, together with congestions producing abnormal sensations of various kinds and degrees, with an increased temperature of the blood, often a dangerous cause, each being a secondary cause for the perpetuation of pathologic activities

The foregoing statements, when considered in association with the plan now taught, respecting operative medico-biologic science, may seem void of practical utility, but after the mind has grasped the correct interpretation implied in the separate functions of the four departments of ultimate active principles, it may then be recognized that this view of the situation is of exceeding great value in the management of disease With medico biologic science as well as with astronomic, it is important that we start right that we recognize the correct operative plan, which will enable us to better understand the many details that are extremely practical to consider in persuading what we should do with the numerous variety of causes of disease, in other words, enabling us to better protect the patient from the relation of such causes Some causes require to be neutralized by chemic changes which include the antiseptic, while other causes should be eliminated as early as possible In many instances we should change the existing sensation, often completely swap sensations with medicinal contacts, and even abrogate sensations temporarily with opiates And there can always be very much done to prevent the development of secondary causes within It is often important to diminish the rapidity of production of the specific causes that develop as secondary causes with non recurrent contagious disease, thus allowing elimination to keep up with the supply, and great success may attend the deploying of vital activity

In the treatment of disease each of the several methods require consideration as to their applicability separately and jointly, a kind of thought exercise vastly superior to the treating of disease from a basis of experimental statistics And there are two grand divisions of disease, one existing simply as abnormal sensation, and the other an associate disturbance existing as pathologic vital action Both divisions may prevail separate from pathologic cellular construction, which constitutes malignant disease

In summing up, we must keep in view the distinct functions of the four divisions of ultimate operative principles, how the cause of disease produces disease, the two divisions of causes existing as primary and secondary and protection of the organism by resort to different methods of treating causes existing in association with the two grand divisions of disease Thus that higher education which is to contribute to a more successful treatment, and also protect invalidism from medical sharks, must be acquired through a better knowledge of the nature of vital forces expressed in special co-operative principles, that department of possible erudition which distinguished leaders allege must await the advent of future generations for its solution

The authority quoted at the commencement of this paper suggested that we examine "the soil and that often what we consider the cause may be only the consequence of disease" Thus, respecting the soil, it is evident that micro organisms will multiply rapidly wherever there is a food supply, and expire equally as rapidly when the supply is arrested And the special food or soil favorable for this development in the human system is made to exist largely from pathologic vital action Thus in the virus produced by non-recurrent contagious disease, the micro-organisms will multiply into millions and perish when the food supply or *materies morbi* is no longer elaborated In such instance the presence of the microbe becomes a consequence rather than a cause of the disease And the reason why certain contagious disease is non-recurrent, is that the human organism can seldom develop such special virus but once in a lifetime, the *materies morbi* of such disease being a product from pathologic vital action and not a poison excreted or secreted by the microbe The microbe does not come in and attack the human organism, but they simply multiply and consume the virus as scavengers And in close association with such facts we are required to consider that complex problem represented in the term immunity This problem, as well as the reason why certain contagious disease is *non-recurrent*, can not be explained from the present plan taught of operative medico-biologic science, while it is very easy of solution when considered from the correct plan of operative vital energies relative to existing causes of disease

Scientifically considered, the immuning principle is not operative except with non-recurrent contagious disease, while the temporary protection afforded with other forms of disease is not from immunity, but a protection from the deployment of pathologic vital activity Whereas that protection experienced in the name of immunity, made possible with non-recurrent contagious disease is explainable as follows With such form of disease a special morbid change prevails but once in a lifetime as the general fact, which pathologic act elaborates the virus of dangerous relations And the danger attending such disease exists because such virus is produced more rapidly than it can be disposed of by elimination, thus becoming a secondary cause for complex disturbance But when attenuated virus is introduced, a mild and incomplete pathologic disturbance will prevail, developing the special virus within the limit of safely possible elimination And later, when pure virus becomes introduced, the previous partial change already effected has made it impossible for the organism to produce such virus rapidly in excess of elimination, as would be the fact had no previous mild disturbance been developed Thus safety is practically insured because such pathologic disturbance has been effected on the installment plan And with such disease the microbe or alleged germ develops rapidly from the abundant supply of food, but doing no harm to that organism which is the land of its birth, although such micro-organisms may become carriers of the poison, bottling up the special virus by their organization and giving it a longer existence Such virus constitutes a secondary cause of disease in the organism where it is elaborated, and a primary cause when introduced within an organism that has never experienced such form of pathologic disturbance, while harmless to an organism that has previously experienced such disturbance It is the virus, not the microbe, that becomes the cause of disease The microbe or alleged germ may be a carrier of virus, while the virus of microbe construction is the real cause of disturbance M Pasteur states that the "virulency of the microbe depends on the quality of the material from which it is constructed" The microbe is not sufficiently complex in its organization to perform the function of excretion or secretion of poison, but does multiply and perish rapidly, to be succeeded by new births from the same material, and in the meantime the special pathologic virus may undergo chemic changes and become a more dangerous poison Thus when we keep in mind the *modus* *operandi* of how the cause of disease produces disease, we shall experience less fear of the microbe family and have less to say of disease germs It is only the micro organism that have been developed from some virus cause of disease that occasion pathologic disturbance to be manifested

The cause of disease does not attack the living human organism It does not act The machinery of disturbance is operated wholly by the vital force The cause is passive and only occasions abnormal sensations by its contact, generally expressed as irritibility, in response to which pathologic vital action is developed, which in itself constitutes active disease The superior success in modern surgery, alleged to be due to the killing of micro-organisms, may be better explained through the fact that the microbe killer has changed the elaborated synthetic organic fluids, harmless as such, but which may soon enter into chemic changes in their downward career, producing poisonous products of dangerous relations existing as causes of disease developed within Yet while the result of such practice has been construed in support of the germ theory of cause, the other explanation of protection is equally as well supported and certainly *in better accord with the correct plan of operative life functions*

There is no army of disease microbes hovering in the air awaiting opportunity to attack exposed tissues, and the phrase "disease germ" is a misnomer failing to represent the correct situation of complex associations The term is destined to become eliminated, being without usefulness in explanation of medico biologic problems Some forty years ago distinguished surgeons discovered that in operations, were the flaps allowed to remain exposed to the air until the oozing had ceased and the surface became glazed over, great advantage was insured to the individual

And there is another discovery to be made of significant importance, implied in the fact that there is a vast amount of alleged medical science education inculcated that fails to develop scientific intelligence adding confusion in place of illumination to the vision of mental perception

In closing I will call attention to another special feature of the situation, to be critically considered within the department of medico-biologic science, in the fact that ancient men made a serious mistake of interpretation respecting the operative plan, equally as fallacious scientifically as that perpetrated and long accepted by the early astronomer, as the Ptolemaic version And this great error of dangerous infliction has been perpetuated unto our generation, and is now being thrust upon a defenceless people who are without thoughtful ability of escape, being assured through the influence of revered names that have become historic for presumed intellectual achievements, while such fame will be recorded in future history inglorious of scientific merit, and on a level with that of the early astronomers who failed to think in accordance with nature's methods regarding the operative universe And among the numerous inflictions that have been thrust upon a civilized people from such error, may be recognized the misery which comes from a belief in the doctrine that alcoholic spirit may supply an "active principle" from without as a supplementary power that will assist vital strength as remedial of weariness and debility And no doubt there are many learned men who are so well satisfied with the present pseudo scientific education, and so persistent that new facts must be weighed by old methods, so over-persuaded by their early convictions, as to not care to give time for the comparison of this modern interpretation with the life phenomena presented Yet it will ever remain a fact, not possible of supported contradiction, that medico-biologic science is based on the ultimate vital functions, normal and abnormal, of the four mentioned divisions of operative life principles

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THE ALLOXUR BODIES AND THEIR ESTIMATION

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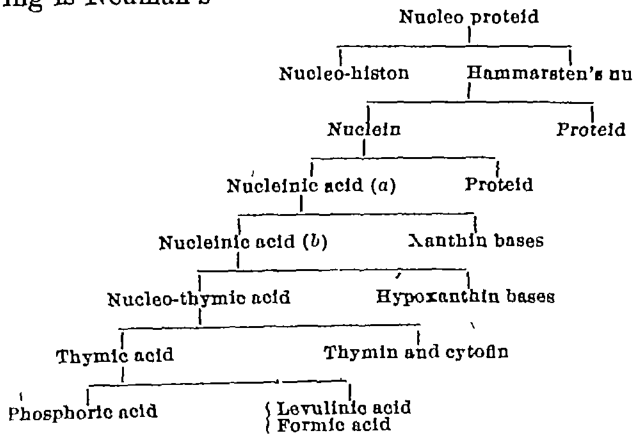
The alloxur bases have recently excited considerable interest among pathologists, partly on account of the difficulties of their direct estimation, but principally from the failure of exact analysis to confirm the "uric acid diathesis" theory

The latter theory dates from Garrod's discovery of an excess of uric acid in the blood in true gout, to culminate in Haig's teachings, who sees no difference between true gout, articular rheumatism, epilepsy, the "rut" of the springtime, religious excess and *masturbation* He bases *his theories on the formation of* uric acid in the kidney, in a proportion of 1 to 33 of urea, when, owing to not very clearly defined conditions, a portion of the uric acid fails to be eliminated and is carried into the general circulation, to be deposited in the system, causing all sorts of ills when it is brought again into the circulation Horbacewski has proved that uric acid and the alloxur bases are formed from nuclein, and therefore we should expect, and we find, an increase of uric acid in leucocytosis, or any wasting disease, where there is excessive cell destruction Haig's method of estimation of uric acid, viz , Haycraft's, is admittedly inaccurate, and further he administered salicylic acid or the salicylates to eliminate the uric acid Boden has pointed out that the salicylates produce a leucocytosis, and in some very careful experiments shows that the elimination of uric acid runs parallel with the number of leucocytes

Roberts, in his very elaborate investigations, finds that the uric acid exists in solution in the blood as a quadriurate ($C_5H_3N_4O_3HMC_5H_3N_4O_3H$), and that in the presence of an alkali the biurate is formed ($M_2C_5H_2N_4O_3$), which is barely soluble This explanation accounts for the comparative failure of the alkaline treatment in gout and the insolubility of the tophi He accounts for the precipitation of the uric acid in the joints, by the analysis of the synovial fluids, which he claims are the most alkaline secretions in the system If the biurate comes in contact with a weak free acid or an acid salt, it is converted into the quadriurate and dissolved in the blood Acid sodium phosphate (NaH_2PO_4) is the one used by nature and clinical experience partly goes to show that it acts as an eliminate of uric acid, besides in *some cases reducing the tophi*

There are three ways to account for the excess of uric acid in the system Imperfect excretion, increased formation, and both combined In the early stages of gout, pathologists have failed to find any kidney lesion, and as other substances are eliminated in normal quantity, if kidney insufficiency was the cause, it would point to a special cell in the tubules, whose duty it is to eliminate uric acid, which [illegible] supposes an exactness of method not [illegible] th[illegible] [illegible]omies of nature It follows, therefore, that we must look to an increased production, and as in gout there is no leucocytosis and no pus, an excess of cell destruction, usually described as of nervous origin, is the conclusion by exclusion, added to this gout is usually associated with digestive disturbances pointing to defect in nutrition as the primary cause

In the so called gouty diathesis or uric acid diathesis, the clinical symptoms are so numerous that it has become a haven of refuge for the perplexed diagnostician Careful analyses have shown that the elimination or non elimination of uric acid bears no constant relation to the symptoms, it has therefore become necessary to look elsewhere At present we are prepared to inculpate the xanthin bases There are twelve alloxur bases, mostly found in the vegetable as well as the animal kingdom They are adenin ($C_5H_5N_5$), hypoxanthin ($C_5H_4N_4O$), guanin ($C_5H_5H_5O$), xanthin ($C_5H_4N_4O_2$), heteroxanthin ($C_6H_6N_4O_2$), paraxanthin ($C_7H_8N_4O_2$), episarkin ($C_4H_6N_3O$), carnin ($C_7H_8N_6O_3$), epiguanin ($C_{10}H_{13}N_9O_2$), and others which have not yet been investigated There are several schemes given for their formation The following is Neuman's



Thymin and cytofin are two recently discovered bases, of which the reactions have not yet been published

The total amount of alloxur bases eliminated in twenty-four hours in the urine is very small, varying very considerably with diet Camera found that with mixed diet the elimination was 87 0 mg, with flesh diet, 44 0 mg, with cabbage and apples 111 0 mg, with vegetable diet (peas and cabbage) 72 0 mg He finds that the proportion of nitrogen in the xanthin bases to that of the uric acid is as one to 18 1, 7 6, 35 8, 18 1 respectively Salkowski finds the proportion of uric acid to xanthin bases to be about 13 to 1, Flatow and Reitzenstein make the average quantity eliminated 29 2 mg

Adenin ($C_5H_5N_5$), was discovered by Kossel in 1885 and is the simplest member of the group, it is apparently a polymerization of hydrocyanic acid It is oxidized into hypoxanthin by the substitution of oxygen for an amido group Lilienfeld, in his study of the chemistry of leucocytes, has shown that the nucleus of the cell contains a complex nucleohiston which is decomposed by acids into histon and leuconuclein, the latter can in turn be decomposed into albumin and nucleinic acid, which, on heating with mineral acids, yields phosphoric acid and the nuclein bases Adenin is best prepared from the mother liquor of tea It does not appear to have any physiologic action It has been found in the urine of leukemia Hypoxanthin, or sarkin ($C_5H_4N_4O$), is the oxidation product of adenin, from which it can be formed with nitrous acid It is a normal constituent of human urine and has been found in excess in liver and kidney diseases by Thudichum, also in fevers and nervous diseases by Pouchet, according to von Jaksch it is present in exudates and transudates Its physiologic action has been studied by Filhne, who states that 25 to 100 mg begin to act on frogs in six to twenty-four hours, causing increased reflex excitability with convulsive attacks

Guanin ($C_5H_5N_5O$) is principally made from guano Von Jaksch states he has found it in transudates and exudates Most observers have failed to find it in normal urine Pouchet has found it in fever and nervous diseases

Xanthin ($C_5H_4N_4O_2$) occurs rarely as calculi, more often as crystals in the urinary sediment Normal urine is said to contain 0 032 to 0 025 grams in twenty-four hours In the urine of leukemia, Stadthagen found an average of 0 07 gm In tabes dorsalis, Pouchet found 0 08 The physiologic action is said to be a muscular rigor and paralysis of the spinal cord, the heart muscle is also affected

Paraxanthin ($C_7H_8N_4O_2$), or dimethylxanthin, occurs in very small quantities in normal urine, it being only capable of detection in five to six liters Rachford has found that it exists in excess in cases of migraine, and in epilepsy which is accompanied or preceded by migraine He has not been able to find it in other forms of epilepsy It is probably the most toxic of all the xanthin bodies yet studied, 1 to 2 mg producing almost at once a rigor mortis-like condition of the muscles injected, with diminished reflex excitability without previous increase Six to eight milligrams introduced into the lymph-sac bring on gradual loss of voluntary motion as well as of reflex excitability In mice the reflexes are increased almost to a tetanus The injection of 0 2 gm in a 500 gr guinea-pig produced convulsions and death in half an hour The action of xanthin, hypoxanthin and paraxanthin seems similar, differing in degree

Carnin ($C_7H_8N_4O_3$) appears to have no physiologic action

Gerontin ($C_5H_{14}N_2$) has not been investigated, but is said to effect the nerve centers and heart ganglia, 0 5 mg will kill 10 grams of frog

Spermin ($C_5H_{14}N_2$) (?) is said to be tonic in its action

From our knowledge of these bases it seems as if they are hardly likely to be of any great importance in diagnosis Paraxanthin and possibly xanthin are the only members of the group which up to the present have been definitely associated with a disease

There are three methods by which the xanthin bases can be estimated as a whole, viz The methods of Camera, Krüger-Wolf and Salkowski The first two are open to the objection that they do not estimate the xanthin bases directly, but by estimating the nitrogen of the alloxur bodies and deducting the nitrogen of the uric acid estimated by some other method, thus throwing the whole of the error on to the xanthin bases

Camera's method is as follows Take a given quantity of urine and add a solution of sodium hydrate containing about 1 0 and dilute the urine to 1010 or 1011 specific gravity Take aliquot part of diluted urine, add 5 c c Salkowski's magnesia mixture, filter, take aliquot part of filtrate, add 0 5 calcium carbonate and 5 c c of 3 per cent solution of silver nitrate, allow to stand about two hours, filter, wash free from chlorin and silver, dry over sulphuric acid and estimate the nitrogen by Kjeldahl method

Camera's modified method is somewhat more simple Take 240 c c of urine, add 30 c c Ludwig's magnesia mixture and 30 c c 20 per cent ammonia, shake well and filter, take 125 c c of filtrate (equal to 100 c c urine), add 10 c c of 3 per cent ammonia silver nitrate solution, filter, wash and estimate nitr gen by Kjel dahl method

Salkowski's magnesia mixture is made with magnesium sulphate 1 part ammonium chlorid 1 part, ammonium hydrate, sp gr 0 924, 4 parts, water 8 parts

Ludwig's magnesia mixture is made with magnesium chlorid, 100 0 grams, dissolved in water, add ammonia in excess and then ammonium hydrate until the precipitate is dissolved and fill up to 1000 c c with water

The Krüger Wolf method Take 100 c c urine, boil, filter and add 10 c c of a 50 per cent solution of sodium bisulphite, then 10 c c of a 13 per cent solution of copper sulphate, after short boiling add 5 c c of a 10 per cent solution of barium chlorid, remove from heat and allow to stand for two hours, filter, wash about five times with boiled water cooled to 60 degrees C, and estimate the nitrogen in the precipitate by the Kjeldahl method

In all of the above methods the uric acid has to be estimated separately, the nitrogen calculated and deducted from the nitrogen found, the remainder being the nitrogen of the xanthin bases

The usual method of estimating the uric acid is that of Hopkins of London, England The writer uses the following modification Take 100 c c of urine, acidulate with acetic acid, neutralize to slight alkalinity with ammonia and saturate with ammonium chlorid (about 30 grams is required), after standing three hours the precipitate is filtered, preferably with a suction pump, the precipitate well washed with a saturated solution of ammonium chlorid, dried at 100 degrees C to drive off any ammonia, then dissolve in distilled water, boil, cool, add 50 c c of a decinormal solution of hydrochloric acid, raise to the boiling point, cool and titrate the excess of acid with a decinormal soda solution, using dimethyl-amido azo-benzol as indicator The difference between the quantity of decinormal hydrochloric and soda solutions multiplied by 0 0168 will give the amount of uric acid, which divided by three will give the amount of nitrogen As will be shown below, this method is not correct as some of the xanthin bases are partially precipitated by saturation with ammonium chlorid

Salkowski's method recently published has the advantage over the above methods in that it estimates the xanthin bases directly Take 600 c c of urine and add 200 c c of magnesia mixture, allow to stand one hour filter, take 700 c c of the filtrate and add about 18 c c of a 3 per cent solution of silver nitrate and allow to settle, if the precipitate appears granular or does not settle quickly add a little more ammonia, but as the xanthin silver salts are not perfectly insoluble in ammonia this requires care, take a specimen of the supernatant liquor and add nitric acid if a precipitate takes place then the silver is sufficient After standing one hour filter in a large filter and wash until on the addition of silver nitrate to the washings only a slight cloud is produced The precipitate is suspended in water, a few drops hydrochloric acid added and the solution saturated with dihydrogen sulphid, warming gently on the water bath, filter and wash well evaporate the filtrate to dryness, first on the flame and then on the water bath To the residue add 20 c c of a 3 per cent solution of sulphuric acid (H_2SO_4 30 c c, H_2O 900 c c), warm gently and allow to stand twelve to eighteen hours, filter, wash twice with the 3 per cent sulphuric acid solution and once with water add excess of ammonia and 1 or 2 c c of silver nitrate, testing as above as to quantity required, filter, wash well, dry, ash the filter in a porcelain crucible, dissolve the silver residue in nitric acid and estimate the silver by the Volhardt method

Salkowski prefers estimating the silver instead of the nitrogen, on the ground that some ammonio silver compounds are formed, which cause high results on the other hand, adenin at least, and probably others of the xanthin bases form two silver salts which would tend to give high results by his method also It is probable that by boiling the silver xanthin precipitate with magnesium oxid the ammonio-silver salt would be broken up and the ammonia set free

The method is cumbersome, the filtration and washing of the large gelatinous precipitate, and the evaporation of a liter to dryness take considerable time The author has substituted the following process, which gives the same results and is less troublesome

It was necessary first to find out whether the whole of the uric acid was precipitated by the saturation with ammonium chlorid, to this end a sample of bought uric acid was purified by warming with 3 per cent sulphuric acid, cooling, filtering and washing with water and then dissolving in a little potassium carbonate Three portions of 100 c c each of the solution were each acidulated with acetic acid, neutralized with ammonia, saturated with ammonium chlorid, allowed to stand three hours, filtered, washed with a saturated solution of ammonium chlorid, the filtrate and washings made strongly alkaline with ammonia, 3 per cent silver nitrate solution added, filtered, the precipitate washed, dried at 100 degrees C, and the nitrogen estimated by Kjeldahl's method, at the same time, to prevent error from possible nitrogen containing impurities in the reagents used, and from the ammonia in the atmosphere of the laboratory, a control test was carried through at the same time, four other tests were subsequently made under the same conditions with the following results

	No 1	No 2	No 3	No 4
Nitrogen in filtrate found	0 00014	0 00035	0 00012	0 00011
Nitrogen in control	0 00028	0 00028	0 00028	0 00007
Actual nitrogen in filtrate	—0 00014	+0 00007	+0 00014	+0 00007
		No 5	No 6	No 7
Nitrogen in filtrate found		0 00007	0 00012	0 00012
Nitrogen in control		0 00007	0 00028	0 00028
Actual nitrogen in filtrate		0 00000	+0 00014	+0 00014

The average actual nitrogen found in the filtrate, after precipitation by saturation with NH_4Cl, on the seven experiments was therefore 0 00006 or 0 18 mg uric acid, showing that the whole of the uric acid was precipitated

Being satisfied with this result, the following process was tested against the Hopkins and Salkowski methods To 600 c c of urine add 200 c c of Salkowski's magnesia mixture, allow to stand one hour filter, acidulate 700 c c of the filtrate with acetic acid, neutralize to faint alkalinity with ammonia, and saturate with ammonium chlorid (about 150 grams are required) allow to stand three hours filter and wash with saturated ammonium chlorid solution Warm the precipitate in a [illegible] cent sulphuric acid and allow to stand twelve to eighteen hours, filter, wash twice with 3 per cent sulphuric acid and once with water The filtrate including washings should not exceed 50 c c (3 per cent H_2SO_4 dissolves uric acid in the proportion of 1 to 20,000) The fitrate containing the xanthin bases is added to the first filtrate, the mixture made strongly alkaline with ammonia, 3 per cent silver nitrate solution added, filtered, washed and either the nitrogen estimated by Kjeldahl's method or the filter incinerated, the silver dissolved in nitric acid and estimated by the Vohlhardt method

As some of the xanthin bases are precipitated by saturation with ammonium chlorid, in the following estimation the solution of xanthin in 3 per cent H_2SO_4 solution and the filtrate from the saturation were estimated separately

	No 1	No 2	No 3	No 4
Hopkin's method				
Uric acid nitrogen	0 05208%	0 04082%	0 03528%	0 03268%
Xanthin nitrogen in filtrate from ammonium chlorid solution	0 00288%	0 00112%	0 00294%	0 00162%
Sulkowski's method				
Nitrogen of xanthin bases	0 00325%	0 00284%	0 00267%	0 00346%
Author's method				
Xanthin nitrogen in saturation filtrate	0 0026 %	0 0018 %	0 00226%	0 00178%
Xanthin nitrogen in H_2SO_4 filtrate	*0 00108%*	*0 0016 %*	*0 0008 %*	*0 00093%*
Total xanthin nitrogen,	*0 00368%*	*0 0034 %*	*0 00306%*	*0 00266%*

It will be seen from the above four analyses made from urine that the methods employed give practically the same results, the average difference being 0 000536 The first three were mixed urines, No 4 was a normal urine and it will be noticed that the proportion of xanthin base nitrogen to uric acid nitrogen is higher in No 4 than in the pathologic mixed urines

The author claims that his method is more simple and occupies less time than Salkowski's, while giving practically the same results Owing to laboratory difficulties the estimations of the nitrogen were made by Kjeldahl's method, a control being run through at the same time, and not by estimation of the silver

Some experiments made some months ago led to the conclusion that xanthin was precipitated by saturation with ammonium chlorid out of an alkalin solution, whether completely was not discovered Allen of Sheffield, England, states that it is probably almost completely precipitated under the above conditions An attempt was made to settle the point by the following experiments

A solution was made from some bought crystal xanthin, containing by calculation, 0 0033 nitrogen per 100 c c The solution was acidified with acetic acid, made slightly alkaline with ammonia and saturated with ammonium chlorid, allowed to stand three hours, filtered and washed with saturated solution ammonium chlorid The precipitate was then warmed with 3 per cent sulphuric acid and allowed to stand eighteen hours, filtered washed and the filtrate precipitated with ammonio-silver nitrate sollution, filtered, and the nitrogen estimated

The filtrate from saturation with ammonium chlorid was also precipitated with the silver solution and the nitrogen estimated in the precipitate The following results were obtained

	No 1	No 2	No 3.
Nitrogen of xanthin not precipitated by NH_4Cl	0 00168	0 00191	0 00182
Nitrogen of xanthin precipitated by NH_4Cl..	0 00126	0 00102	0 00096
	0 00295	0 00293	0 00278

The experiments show that xanthin is only partially precipitated by the method employed

The author has made a considerable number of estimations of the xanthin bases, but has failed to find any relation between them and mental disease, their total quantity varying in proportion to the metabolism, appearing to be greatest in quantity when the uric acid is small and lowest when it is excessive He has failed to verify Rachford's results in epilepsy, as yet, but a typical case of migraine epilepsy has not presented itself In two cases of tabes dorsalis the total xanthins were excessive As stated above it seems doubtful whether the xanthins are of much pathologic importance, their presence in excess being, probably, evidence of a want of oxidation in the metabolism

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ON THE EXISTENCE OF EPIDEMIC CEREBRO-SPINAL MENINGITIS IN CHICAGO, WITH REPORT OF A CASE WITH AUTOPSY

Read at the Meeting of the Chicago Society of Internal Medicine June 23 1898

BY JAMES B HERRICK, M.D ,
CHICAGO

The object of this paper is to prove two facts, first that a genuine case of epidemic cerebro spinal meningitis has occurred in Chicago, the proof resting on the clinical history and the autopsy, the latter showing the presence of the meninges of the diplococcus intracellularis meningitidis of Weichselbaum, second, that this case was not a sporadic one, but that many other cases have occurred, or in other words, that there is a mild epidemic of cerebro spinal meningitis in this city So far as I can learn this is the first case of this disease reported for some time in this city and the first case in which the presence of the meningococcus has been recorded as found, thus establishing the nature of the disease beyond a doubt That many other cases have been recognized as epidemic cerebro-spinal meningitis, I am well aware from conversation with physicians

The patient was a male of 40 years, who on Friday, June 10, 1898, had a severe headache and backache About this time he vomited Tuesday, June 14, he came under my care in the Presbyterian Hospital There was severe frontal and occipital headache, causing sleeplessness, and only relieved by morphin The neck was rigid, and painful on attempted motion, there was but slight retraction of the neck There was no paralysis nor any sensory disturbance aside from the pain already mentioned The examination of the chest was negative Over the skin of the abdomen and the thighs were very many light purple or violet petechial spots, but a few of them being larger than the head of a pin The spleen was not palpable The urine showed neither albumin, sugar, nor casts The mind was clear, but the patient was restless and constantly complaining of his head

He lived until 10 45 P M Sunday, June 19, dying five days after entrance to the hospital and on the tenth day from the onset of symptoms

During these five days he had a fever of a remittent type, varying from 100 6 degrees in the morning to 103 or 104 degrees in the afternoon, the records being axillary There was no pre-agonal rise The pulse at first was regular and relatively slow, often being found below 90 though the axillary temperature was as high as 103 degrees During the last thirty six hours the pulse became more rapid, averaging about

124 The bowels were moved by enemata Several times he urinated involuntarily, once he had to be catheterized He never vomited after admission to the hospital He gradually became wildly delirious and at four on the afternoon of the day he died the nurse recorded a "spasm lasting about one quarter of a minute" On the morning of the 17th his respiration was rapid, forty per minute Numerous moist râles were heard over both chests and a patch of dulness with broncho-vesicular breathing was made out in the left lower lobe, posteriorly He coughed up a sero-purulent material Just before death the respirations were for several hours between 70 and 80 to the minute The petechial spots faded somewhat before death, no new ones appearing There was no herpes No paralysis was at any time made out No foci of suppuration could be found

The clinical diagnosis was acute epidemic cerebrospinal meningitis, broncho-pneumonia

The autopsy was made twenty-four hours after death, and I am indebted to Dr Hektoen for the abstract of the protocol and for the cultures and stained specimens of the micrococcus which I exhibit

Autopsy twenty-four hours postmortem, by Drs Hektoen and Freeman Anatomic diagnosis Acute purulent leptomeningitis associated with the diplococcus intracellularis, bronchitis and hypostatic pneumonia, cloudy swelling of the solid organs

Abstract of the protocol (No 532) A well developed, well nourished thick set man, pronounced lividity, brownish spots in skin over abdomen

Scalp and skull normal, the entire cerebral leptomeninx is infiltrated with a thick, yellowish, purulent fluid which is especially marked about the posterior margins of the cerebellum There are no miliary tubercles to be seen The amount of cerebro spinal fluid is small but the lateral ventricles contain quite a quantity of purulent fluid which in the horns becomes a thick, yellowish pus The walls of the ventricles are soft The ears, orbits, sphenoidal and frontal sinuses are normal The nose could not be properly examined There is exudate around the upper end of the spinal cord, but the spinal canal was not opened

The liver and the kidneys show cloudy swelling, in the kidneys the glomeruli are prominent The heart muscle is friable and flabby In the left lung the bronchi contain muco-pus, the posterior parts of both lungs are congested and heavy, in the posterior part of the left lung are large areas in which the substance is solid, deep red, and rather homogeneous on the cut surface The other organs are normal

The bacteriologic examination The smears from the meningeal exudate show a minute coccus, occurring often as a diplococcus, and free as well as in the interior of polymorphonuclear leucocytes, this coccus has no capsule and destains by Gram's method The exudate is very rich in leucocytes, many of which show evidences of disintegration, large, uninuclear cells also occur, but these are few

Glycerin-agar and serum (Löffler) tubes inoculated with the meningeal exudate and the ventricular fluid show after twenty-four hours in the incubator a number of minute, dew drop like colonies which (in the agar medium) have a pearly, translucent appearance, their outline is circular and well defined, the central parts brownish under the microscope, these colonies consist of cocci, in the form of heaps, pairs and fours there are no chains they are promptly decolorized by Gram's method One or two larger colonies in one tube of glycerin-agar and one of serum were found to be the staphylococcus aureus and looked on as due to contamination Otherwise these cultures were pure

Inoculation upon new tubes of agar and serum and also in bouillon gives rise to a quite rich, typical growth which corresponds in all essentials to the descriptions of the diplococcus intracellularis meningitidis by Councilman, Wright and Mallory except that in the glycerin-agar tubes a considerable diffuse growth in the form of a very delicate film developed as well as the typical colonies The authors quoted lay much stress on the absence of any diffuse growth of the organisms obtained from the cases that form the basis of their extended study

About 1 5 c cm of the ventricular fluid was inserted into the abdomen of a guinea pig, the animal seemed a little sick but is still alive and apparently not very ill forty-eight hours afterward

From the heart's blood and from the lungs cultures show staphylococcus pyogenes albus and bacillus coli communis, the spleen, liver and kidneys contain the colon bacillus The histologic study of the organs is not completed

The acute onset with headache, backache and vomiting, the rigid neck, delirium, the pulse slow regardless of a high temperature, the absence of splenic tumor, the petechial rash, make a picture of meningitis wholly unlike the tuberculous form, unassociated with primary pus foci and clinically resembling the epidemic variety The finding in the meningeal exudate of the organism first described in 1887 by Weichselbaum, and later especially in the last few years identified by many as the specific cause of epidemic meningitis, its absence from the viscera would seem to furnish conclusive evidence of the nature of this case and to prove the first proposition that a case of epidemic cerebro spinal meningitis has occurred in Chicago and has been partially identified as such

For the proof of the second proposition, that an epidemic of meningitis exists in Chicago, I shall advance the oral testimony of many physicians who have told me of cases of meningitis that have recovered, the recovery of a case of meningitis being one of the strongest proofs that the disease is not due to the tubercle bacillus or to the ordinary pyogenic organisms, but to the diplococcus intracellularis And I shall also give the abstracts of the following cases of meningitis seen by myself since Jan 1, 1898, to show that an unusual number of cases answering to the epidemic form have been met with, in two of these there being recovery

Case 1 —Child, 2½ years, seen with Dr A C Cotton, Jan 17, 1898 Headache, fever, vomiting and symptoms suggesting tuberculous meningitis Remission in symptoms Later, return with coma and death Whole duration of illness about three weeks

Diagnosis Meningitis, either tuberculous or the mild remittent type of the epidemic form

Case 2 —Adult, male Convalescent from croupous pneumonia. Meta pneumonic inflammation of right ankle joint and of neighboring tissues Gradual improvement Suddenly developing headache, vomiting, delirium, retraction of neck, fever Death in twenty four hours Diagnosis, probable meta pneumonic meningitis

Case 3 —Seen with Dr E E Prescott March 13, 1898 Boy 5 years, acute, excruciating headache child beating head and pulling hair on account of pain, marked rigidity and retraction of neck, pain on moving neck or back, temperature 101 degrees, pulse very variable Passed from my observation but I was later informed that a period of marked improvement and a pyrexia was followed by a return of headache, fever, etc , but that finally after about four weeks the boy seemed quite well Six weeks after the onset he was still in good health Original diagnosis was a typical tuberculous meningitis Without doubt this was a case of epidemic cerebro spinal meningitis

Case 4 —Child of 3 years visiting in Chicago from Boston Poor appetite, slight fever, cross for a few days When seen March 20, 1898, quite dull and drowsy Temperature 100 degrees Two days later slight improvement Then low fever from 99 to 102 degrees Stupor, Cheyne Stokes respiration, abducens paralysis, unequal pupils, muscular twitchings and rigidity and death.

Diagnosis Tuberculous meningitis

Case 5 —Female child 2½ years, seen with Dr Becker, March 24, 1898 A few days before, headache, vomiting, rapid respiration, high temperature When seen in consultation comatose, no paralysis, rapid respiration, consolidation of upper lobe of lung Death same day

Diagnosis Pneumococcus, cerebro spinal meningitis though possibly of epidemic form with secondary pneumonia

Case 6 —Adult male with old endocarditis producing aortic regurgitation Cerebral embolism with right hemiplegia and aphasia. After being in hospital several weeks convulsions oft repeated, temperature, conjugate deviation of eye, coma, death

Autopsy Aortic regurgitation, old cerebral embolism with secondary softening, acute meningitis with purulent exudate, no primary pus focus Failure to obtain cultures

Diagnosis Probable epidemic cerebro spinal meningitis

Case 7—Seen with Dr S A Hemmi, March 8, 1898 Child of 2 years in coma Moderate temperature, early history indefinite, but suggestive of tuberculous meningitis Two other children previously dead of brain trouble Death

Diagnosis Tuberculous meningitis

Case 8 —Seen with Dr T A Davis May 1, 1898 Male of about 20 years Onset with headache, pain in back and abdomen and vomiting, suggesting at one time appendicitis Later excruciating headache, rigid neck, edematous and reddened area on dorsum of left hand (culture from this negative) Remittent temperature with much irregularity, pulse variable Remission in symptoms, then return, with opisthotonos, delirium, rapid pulse, death after about four weeks

Final diagnosis Epidemic cerebro-spinal meningitis

Case 9 —Seen with Dr C E Sharpe, May 7, 1898 Male about 22 years Felt rather poorly on retiring May 5, but went to work next morning, May 6 Left work on account of pain in back and head Saw doctor at office, temperature 102 degrees Ate supper, in night vomited, headache severe, grew stupid When seen in morning was comatose and hemiplegic, temperature 103 degrees, pulse rapid and weak, involuntary discharges Later history not obtained as yet.

Diagnosis Epidemic cerebro-spinal meningitis of fulminating type

Case 10 —Child of 4 years seen with Dr DeBey June 9, 1898

Child taken suddenly four weeks before with vomiting, headache, delirium, retraction of neck, convulsions Diagnosed by doctor as meningitis Fever lasted about ten days, had disappeared when I saw the child There was no complaint of pain no rigidity of neck, but complete deafness Child extremely cross and irritable Great emaciation To-day, June 23, Dr DeBey reports condition as practically the same, though emaciation and weakness are more pronounced

Diagnosis Epidemic cerebro spinal meningitis

Case 11 —Case just reported with diagnosis proven as epidemic cerebro spinal meningitis

Case 12 —Adult male entered Presbyterian Hospital June 22 with diagnosis of typhoid fever with meningeal complication From intelligent patient and from wife learned that onset was rather sudden two weeks ago with chill, intense headache and vomiting Two nights later was delirious, as well as the day following Temperature said by doctor to have been 104 degrees No good sleep for these two weeks on account of severe headache, though other symptoms have improved No spleen or other earmarks of typhoid Temperature in evening 101 degrees

Diagnosis Possible mild case of cerebro spinal meningitis

Of these twelve cases, I believe two were tuberculous (4 and 7) in character, two were probably of pneumococcus origin (2 and 5) The diagnosis in case 1 may be questioned, though the phenomena are explained as well on the supposition of the epidemic form of meningitis as on any other The case of the hemiplegia, case 6, was probably of the epidemic variety The cases 8 and 9 are excellent examples, the one of the subacute form with remissions, the other of the fulminant variety Case 12 is a possible mild subacute case The cases that recovered, cases 3 and 10, were certainly cases of meningitis, their history is typical of the epidemic and their recovery an almost positive proof that such was their character In case 11 the proof is conclusive In other words, of twelve cases of meningitis seen, one is proven of the epidemic variety by bacteriologic examination, two by the clinical history and fact of recovery, two by the clinical history and exclusion of other forms, three are probably of the epidemic variety, though this diagnosis might be questioned, two were probably tuberculous, two probably pneumococcal

That my experience in meeting with an unusual number of cases of meningitis is not unique is shown by the fact that there is current comment among physicians on the frequency of meningitis in Chicago, and that not a few cases recover And in other parts of the country cases are reported Boston has had an epidemic that has furnished the basis for Councilman's report with 35 autopsies Baltimore is furnishing its quota to the wards of Johns Hopkins Hospital, the army surgeons are meeting with cases among the soldiers A physician practicing in a country town in Iowa told me three days ago that he had seen six cases of meningitis in about three months and that some had recovered

This being the fact we can be more guarded in our diagnosis and prognosis in our cases of meningitis And we should, when in doubt, put our diagnosis on a surer basis by attempting to obtain the organism by lumbar puncture, a procedure regarded as without danger in this class of cases and as furnishing us in the majority of instances, when done early, with a sure means of determining the etiologic factor in the case, which knowledge influences materially the prognosis, and it is to be hoped, at some near day, the treatment

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SOCIETY PROCEEDINGS

Associated Health Authorities of Pennsylvania

Fifth Annual Meeting held at Lancaster, Pa ,
May 18 and 19, 1898

(Concluded from page 1522)

Second Day

The report of the Executive Committee by Dr Lee, detailed the doings of that committee to provide for this meeting, the change of time and the arrangement to a visit of inspection to the Vaccine Farm at Marietta conducted by Dr H M Alexander It mentioned the almost total want of attention to the meetings by the local boards of health, their unwillingness to subscribe to the funds and the need of money to pay the indebtedness to Dr W B Atkinson for publishing *Public Health* and the issue of a circular appealing to all to aid the Association by contributing yearly Also it alluded to the success of the New Jersey State Sanitary Association and the Maryland Public Health Association, and presented the Constitution of the latter as an idea of how to obtain members in the want of better interest on the part of the local boards

After some discussion on motion a committee was appointed to report to this session some plan of amendment of the laws of the Association by which to add to the membership, etc.

The Committee on Legislation reported efforts to obtain legislation by the State Legislature for several sanitary matters, all of which had failed owing to the want of money in the State treasury from the burning of the State capitol

The Committee on Publication reported as to the need of money to continue the work of the Association, and the great desire on the part of all to keep the publication of the Journal from lapsing Not 10 per cent. of the local boards had joined the Association, mainly owing to the lack of funds, as the vil lage councils refused to vote them funds for any purpose The committee commended the work done by the Journal and the courtesy of the editor in performing the work without hope of compensation

Dr D H Bergey, first assistant in the laboratory of hygiene, University of Pennsylvania read a paper entitled

POLLUTED WATER SUPPLIES THE NECESSITY FOR LEGISLATIVE RESTRICTION OF THE POLLUTION OF SURFACE WATERS THROUGH THE SEWAGE OF TOWNS AND BOROUGHS DRAINING INTO PONDS AND STREAMS THAT SERVE AS SOURCES OF WATER SUPPLIES FOR OTHER TOWNS AND BOROUGHS

He said the frequent complaints made to the State Board of Health, of polluted water supplies and the almost invariable verification of the truth of such complaints by careful analyses of such waters make it necessary for the State at large to devise means for abating these nuisances in an effective manner The water supplies of many towns and cities are grossly polluted at the present time Perhaps the most notable example of this pollution, not only of the State but the whole country is that of Philadelphia. There are many other cities and towns in the State whose water supplies are grossly polluted to such an extent that they are unfit for use as water supplies without previous purification of the water Wherever the water supply of a town is derived from these streams filtration of the water is necessary in order to protect the health of the community against water borne diseases The necessity for legislative restriction of the pollution of surface waters does not rest primarily at least upon the fact that pollution of these waters will require their filtration to render them fit for domestic use Such legislative restriction is called for more particularly from the fact that some of these streams are now or were rapidly becoming direct menaces to the public health of the communities through which they flow It is no longer to be expected that these surface waters can be maintained in such a condition of purity as to serve as sources of water supplies without previous purification of the water The drainage areas of most of the water courses are already so thickly populated as to render this out of the question, so that aside from the drainage of towns and boroughs along their course, there is sufficient polluted material gaining entrance thereto from the thickly settled rural districts to continue to render the water unfit for domestic use unless purified In order, therefore to prevent these water courses from becoming direct menaces to the health of the communities through which they flow, it is necessary to restrict the pollution through sewage that is now taking place The only way, it seems to me, that this can be accomplished is through the enactment of laws prohibiting such pollution Such laws should prohibit the entrance of all new sewers into any water course which in any part of its course serves as a source of water supply for another town This law should also demand that whenever practicable the drainage of towns now draining into these towns shall be subjected to some reliable method of purification in order to render it innoxious before entering the streams In order to lessen the expense and to render the purification of sewage more efficient it is suggested that a number of towns be combined together into a single drainage area and erect a single purification plant for the entire area Attention is also called to the objectionable character of manufacturing waste and the signal manner in which it increases the pollution of streams So far, the States that have secured important legislation restricting the further pollution of streams, somewhat along the lines of the Rivers Pollution Act of England of 1876, are Massachusetts, New York and West Virginia So far legislation in our own State has not been secured to this end, though several bills have been introduced into the State legislature since 1891 tending to bring this about It is urgently demanded that such legislation be secured in Pennsylvania, on the strength of the knowledge already obtained with regard to the grossly polluted condition of our several streams

Dr Bergey's paper was discussed by many of the members, and on motion, the acts offered in 1891 and 1895 were again referred to the Committee on Legislation and they were instructed to urge their adoption by the legislature at the coming session of that body

After allusion to the lecture of Professor Rothrock, the following was unanimously adopted

WHEREAS, The Associated Health Authorities of Pennsylvania have already placed upon record their opinion that the best interests of the commonwealth would be subserved if the State should become the possessor of extensive areas at the head waters of our principal streams, and

WHEREAS, Up to this time no direct action has been taken to secure these lands which are so essential to the future of the Commonwealth, therefore, be it

Resolved, That we again place ourselves upon record as endorsing for this State a system of forestry reservations, such as have proven to be of so much value to the health and commercial interests of the State of New York

Dr THOMAS TURNBULL, Assistant Bacteriologist of the State Board of Health, read a paper entitled

SUGGESTIONS FOR LEGISLATION IN THE INTERESTS OF A MORE COMPLETE SYSTEM OF SANITARY ORGANIZATION OF THE STATE.

He referred to the menace to cities and towns throughout the country districts, in the absence of any form of health authorities, all who were suffering from any form of contagious diseases were not prevented from being at large and thus constantly distributing the infection to others He quoted the common belief that measles, whooping cough, even scarlet fever were regarded by the people as not of import, hence the objection to report them and often the non need of any medical attendance Thus these contagions were being carried everywhere, and thus were epidemics kept up It was a prime necessity that such legislation should be enacted that would prevent this which was an outrage upon the people He also alluded to the necessity for a codification of the existing health laws of the State, and quoted the admirable system now existing in the State of New York, which he held up as a model for Pennsylvania

Dr B LEE read a paper on

TRANSPORTATION OF THE DEAD

He said this is not a safe thing to do unless under certain restrictions A physician's permit is not sufficient, boards of health alone should give the permission, and these only after very careful consideration It is not a question of proper respect for the dead, but of health for the living In our affection for the dead we are apt to forget the other and sanitary side The danger is greatest in the country, where there is no supervision, but there the hold is to be had in the transportation companies, who are coming to understand the risk to the health of their employes and the trouble the law will give them Diphtheria he thought might be placed upon the free list of not absolutely contagious diseases, the use of formaldehyde doing away with the danger The examination and registry of the embalmers and the responsibilities of undertakers were touched upon the certainty that those who prepare the bodies understand their business being essential The opposition by the members to the placing of diphtheria on the free list was very emphatic among those who discussed the matter, but Dr Lee believed that if it could be done, if the concession could be safely made, it ought to be done

CROSBY GRAY of Pittsburg thought in place of lessening the list scarlet fever and measles should be added to it

Dr M L DAVIS of Lancaster then addressed the Association upon

THE DISPOSAL OF GARBAGE,

illustrating his remarks by pictures on the screen He said We would feel like apologizing to you for referring to the importance and necessity of the sanitary disposal of garbage were it not a fact that in the closing days of the nineteenth century the great majority of the centers of population are without any means or system for this purpose other than to remove it from the most objectionable place in or near the buildings to one a little less undesirable because more out of the way The great State of Pennsylvania, with its 6 000 000 inhabitants, has forty nine cities having more than 10,000 people, and in only eight of these forty nine cities have any other means been adopted for the disposition of garbage than by dumping it at some unfrequented place The practice for many decades has been for inland cities to convey their garbage to a dumping place, while seaport cities loaded it on scows, which by the terms of contract were to be towed ten miles out to sea and the cargo then thrown overboard, this we presume, was sometimes carried out, but we know to a certainty that New York Harbor as well as Delaware Bay has been the depositing place for many a barge load Philadelphia until within the last five years, has emptied all of its sewage and much of its garbage into the Delaware and Schuylkill Rivers, the solid portions have deposited upon the bottom of the channel until it became too shallow for large vessels to enter the port, and we now witness the interesting spectacle of the United States Government expending millions of dollars to remove the filth which Philadelphia dumped in front of her own door

Philadelphia, by this irrational and unwise action, had cut off the possibility of large vessels entering her port, thereby losing valuable shipping trade Inland cities are doing just as irrational a thing, but in a different direction They deposit their garbage in some old abandoned stone quarry, an abandoned sand pit or "sink hole," there to decay and poison the air by the fumes arising from its decomposition, and the water supply when well water is used by the filthy material carried into the ground by rain, finally finding its way into the wells

It is interesting to note how the cities of America dispose of their garbage, an investigation some time since by Mr Randolph Hering of New York into the methods employed by 150 American cities, elicited the following Forty six cities disposed of it by filling or plowing into the land, 14 by dumping it into the sea, lakes or large rivers, 43 cities employed it to feed animals, 17 employed reduction plants, recovering the grease for soap making and making the residue into fertilizers, 30 disposed of it by burning in various kinds of garbage furnaces Thus, while 103 of the cities investigated disposed of their garbage in dangerous and improper ways, only 47 adopted safe methods It is only of late years that any scientific method of garbage disposal has even been sought for

The rapid advancement of sanitation, the establishment of boards of health in cities, enforcing greater cleanliness, made a demand for a better method of disposing of this dangerous refuse and nidus of disease breeding germs The law of demand and supply came to our relief The inventor's mind was turned to the subject and as the substance to be destroyed was impure, naturally the only sure purifier in nature, heat, was suggested Various methods were devised to apply the heat in the best possible manner to burn the material to be disposed of

It is our desire to explain to you how this can be accomplished in the cheapest and most cleanly manner, by considering the various methods of disposal plants and their systems of operation

Garbage, in this sense, should be confined to kitchen waste, that is the rinds of oranges, bananas, apples, peaches, water melons, cantaloups, waste scraps of bread, etc , and the many things of an offensive nature that accumulate in a kitchen and about a house, which are capable of undergoing putrefaction or carrying the germs of disease the refuse of market stalls and the establishments for sale of fish, fruit and vegetables Other substances should never be placed with garbage, as they either require separation from the garbage in some processes, or in others take the place of an equivalent amount of destructible material, and thereby encumber the economic destruction of the garbage proper

In referring to the decomposition of garbage as being dangerous, we do not wish to be understood as advocating the theory of some that disease germs are produced by such decomposition, as we firmly believe that the particular germ of every disease which afflicts the animal body is placed in or received into that body in an embryonic state, to be developed, and to the processes of development and reproduction of its kind are due the manifestations of the disease to which the germ belongs For example, in typhoid fever the germ enters the alimentary canal, the eggs lodge in Peyer's glands and there develop, and it is the irritation produced by this growth which causes the symptoms of the disease That the decomposition of garbage or the decomposition of any other substance will produce these germs we do not believe, but filth of any kind, and putrescible filth especially, furnishes an excellent nidus for such germs, and no better material for their collection and preservation can be found

The amount of garbage produced by different cities varies very much, dependent largely upon location, modes of living, employment, etc American cities, owing probably to more lavish modes of living, produce much more garbage than European cities of the same size Cities located as those along our Jersey coast, where transportation facilities are such that one or two hours' time will deliver at their doors any products from Philadelphia and New York, this, and the class of people who frequent such resorts, cause large quantities of perishable vegetables and fruits to be used, hence a very much greater amount of garbage will be produced than in inland cities of the same size

The average daily amount of garbage produced by American cities is one half to one ton for each 1000 population This can be taken as a safe basis to calculate from, as only in rare instances will it fall below or rise above this amount.

The following tabulated amounts of garbage collected from the cities named prove the correctness of this estimate

Buffalo	per capita, 0 245 pounds per day
Boston	per capita, 0 946 pounds per day
Wilmington	per capita, 0 805 pounds per day
St Louis	per capita, 0 277 pounds per day
New Bedford	per capita, 0 890 pounds per day
Cincinnati	per capita, 0 566 pounds per day
Philadelphia	per capita, 0 832 pounds per day
Lowell	per capita, 0 408 pounds per day

Two methods of disposing of garbage are being adopted at the present time, to the exclusion of others, during the last five years all the cities which have abandoned their insanitary modes of disposal have adopted one or the other The one process is known as the utilization process, and the other, by burning it in a furnace constructed particularly for the purpose, is misnamed the cremation process We will consider first the utilization process The idea that there was material in garbage which, if reclaimed, would be of value, was the incentive which developed this method of disposal, with a view to make a fortune out of the product There are in use two kinds of utilization processes In the one kind benzene or naphtha is used to dissolve the fat contained in the garbage Among the principal ones of this kind are the Merz and the Pierce The Preston, Halthaus and Arnold are purely mechanical processes, no chemicals being used The machinery and appliances of both systems are practically the same, except in the one a naphtha tank The special machinery consists of large iron tanks, fifteen feet high by five in diameter, provided at the top and bottom with means to be closed steam tight, they each hold seven tons of garbage, and upon their number depends the capacity of the plant Presses to press out the grease, dryers to dry the solid portions, fume destroyers, grease extracting tanks, naphtha tanks and condensers, screens, mills for grinding the coarse material after having been dried, together with boilers, engine and the many utensils required to operate a plant having so much machinery The iron tanks which receive the garbage are called cooking tanks, extractors or digestors As a description of one of these plants will suffice for most of them, we will describe the process the garbage goes through in such a plant The garbage is conveyed to the reduction plant by carts, which are weighed upon scales, the cart then goes to the rear of the building, when it enters and dumps its load into a large pit, where two men stand in the foul mass and fork it into elevators, which convey it to the digestors, these men separate the tin cans and other substances found in the garbage A visitor to a plant at Pittsburg describes the process thus from this pit One line of these hoppers, the descending one, is empty It turns upward and gathers up a great wad of the reeking refuse Working like the belt of an engine, but slower, the hoppers carry their load up and come down empty It is carried up to the third story Round the rear of the building you come to a flight of stairs leading up to the second and thence to the third story Here is where the process of reduction is begun, In the third floor room you realize that this place is less a garbage furnace than it is an odor destroying institution The process of cooking the refuse is simple and requires little, though awkward lumbering, machinery The devices for carrying off any objectionable smells and holding them from ascension into the air are numerous and complicated and occupy most of the space of the room There are fans and pipes and ducts and furnaces A single narrow building where the digestors might be stored would be sufficient to get rid of the garbage A great square building with many attachments inside and out is necessary for the destruction of the odors

When the hopper is filled and ascends to the ceiling of the third floor its load is emptied into a duct. Carriers bring it along the roof until it is over one of the huge digestors These are huge cylindric vessels, probably fifteen feet high and five or six feet in diameter Each of them is capable of holding seven tons of garbage They are filled every four hours and are working night and day The top of the digestor is just under the duct that carries the material from the hoppers This gives them some six feet on the third floor, while the under portion is upon the second floor and extends down to a vessel, technically known as the dryer

The room in which the digestors are filled is as clean as an office Attendants are kept busy about the big cylinders, as there are bits of garbage that can not be prevented from falling out when the hoppers empty their load The boys have brooms, and as a bit of stuff falls on the floor it is swept up and put into the vessel Every window of the room is open Going to one of these windows you find it peculiar that there is only the draught of air inward Not a breath goes outside Yet the windows are open all about the room, and there are many windows This is explained by the big fan and air pipe Coming from the air pipe are numerous cylinders extending from the pipe about halfway to the floor These end in a funnel shaped spread, and a hand placed at their mouth finds the air sweeping up into them It is absolutely impossible for a disagreeable odor to get outside the windows The fan is capable of carrying away 75,000 cubic feet of air a minute

But to go on with the garbage The seven ton digestor is full The steam tight and air tight doors at the top are closed after having admitted the stuff There are similar doors at the bottom of the digestors They are so arranged that they can easily be opened and shut The digestor is supported on a huge iron frame, and the fact that simply opening the doors at the top fills them and opening at the bottom empties them shows the facility of the work It can be worked at both ends in a moment Any bad air that may emanate while this process is going on is well taken care of by the big fan There are valves and pipes arranged so that the steam for cooking may be admitted into the cylinder

In many of the garbage furnaces there is a step here in the reduction that is not taken in the Pittsburg establishment It is the crushing Perforated cylinders are sometimes filled with the cooked and charred stuff now called tankage instead of garbage, and an immense pressure is applied to it This squeezes out much of the water and grease in the tankage The grease is utilized and considerable income, about $500 a day, would be derived from this grease here An estimate places the amount of grease that can be obtained from 400 tons of garbage, at that figure But it is not all grease that is derived from the pressing process Much of it is foul, rank water This is the reason the pressing is omitted The drinking water of the city is obtained from the river and were the tankage pressed the water would be drained off into the river Where they have an ocean in which to empty the dirty liquid the pressing can be done advantageously Instead of pressing the tankage, therefore, it goes immediately to the dryer There any water or moisture that still remains is vaporized or absorbed From the fourteen digestors of the factory the tons of garbage are reduced greatly, and seven dryers hold the tankage Each dryer receives about four tons The dryers are steam jacketed cylinders in which huge arms are constantly moving about. They stir up the contents and submit every portion of it to the heat, so that it is thoroughly dried The heat, which is applied through the cylinders, is the same in every part The garbage in this process is much broken up and disintegrated

It is from the dryers that much of the objectionable odor comes In the process the water and grease of the tankage is bound to be converted into vapor This is evident in the fact that after the digestor and the dryer have finished with the garbage only about 20 per cent of the stuff remains There is 80 per cent odor, and such a vaporization might, if allowed free access to the atmosphere, bring misery to many noses and cause the condemnation of many Christian souls So, heroic measures are used on the dryers

There is a vacuum pump next the engine room in the rear of the building It is a pretty and powerful little arrangement. There is a big cylinder, and the pump by constant suction establishes in the cylinder a vacuum Attached to the dryer are pipes and ducts similar to those upon the third floor These pipes connect with the vacuum pump and immediately the vapors take form and make for the aerial quarters they are seized, drawn into the pipes and brought along by the vacuum None of the vapors can escape This is evident, inasmuch as there is not a particle of odor in the room with the dryers

When the dryer has done its work with the tankage the work is over so far as the garbage plant is concerned There are little carts under the dryers that have air tight tops fitted on them These carts are somewhat similar to those the street cleaners drag about, scarcely a deviation from the ordinary fruit vendor's push cart From the dryers the carts take the tankage back to the rear of the building, adjacent to the pit, just where it came from a few hours previous reeking, foul smelling, filthy The load that the cart has is again elevated There is a sort of permanent crane upon which the tankage is hoisted Freight cars are run under this crane and all that remains of the garbage is dumped into the cars, a charred mass

Of the possibly 100 tons that went into the digestor there are about twenty tons left to be converted into fertilizer The tankage is crushed, ground up and chemically treated and its end is first class fertilizer

There are three furnaces that are used to get rid of the vapors Some of the fumes that come from the dryer are susceptible to condensation by a spray of cold water The greater part of them, though, must be destroyed by heat The vapors from the pipes are usually sent through a spray of cold water and some of the gases taken away The remainder goes into the incinerating furnace There are three of these furnaces all with huge boilers Inside the cylinders the pipes are coiled up until many feet of pipe are there The gas flame is applied to these coils It is a process similar to distillation The vapors are run through these pipes and subjected to an intense heat They lose their identity there in decomposition They are separated and destroyed At the side of the engine there are exhaust pipes. Opening the exhaust steam and water are discharged In a few moments the odor is perceptible, and it grows more intense all the time It is highly disagreeable, resembling hydrogen sulphid, the most disgusting chemic compound known The odor is somewhat like putrefied cabbage boiling By placing a handkerchief at the exhaust the odors and vapors will condense upon it and an idea obtained of the insurrection that would arise were the vapors turned on the air But when the incinerating furnace has finished with the vapors there is absolutely no odor left There is therefore none to ascend to the bluff above or to cause trouble From the pit in the rear it is possible that some may ascend, but that is the only place, and the effect is inconsiderable This is the odor that bluff residents occasionally smell The huge fan at the top can cause a draught that sweeps the odors from all the floors It is on the third floor, and its effect is felt on the first From the digestors all odor goes into the pipes and the same may be said of the dryers

The outlay for the operation —There are thirty wagons, each with a driver and a helper, and each with two horses The driver gets $1 66⅔ a day, and the helper gets $1 50 About the works on Second Avenue the forty five men employed at various salaries are from office boy to superintendent It is not unfair to place the wagon men at $30,000 and the others at $20,000 There is the sum of $30 000 still to be used in the garbage furnace alone Of the $30,000 that remains, the horses must be kept, the factory must be kept up and incidental expenses must be borne Incidentals cover a multitude of sins But whatever else can be said of the garbage plant its efficiency can not be denied It is visited by officials of other cities, and is called perfect.

To summarize, the utilization method is to receive the garbage in a pit, separate tin cans and other solid material from it convey the garbage proper to the digestors, where it is treated by a cooking process by steam alone in the one case and in the other by steam and naphtha to extract the grease, the pressing out of the liquid, drying of the solid portion and grinding for fertilization, and the distillation of the naphtha to reclaim it

The burning method of disposing of garbage is accomplished by two methods, the one utilizes the carbon in the garbage as fuel and the other does not. These furnaces are of the horizontal type, when the garbage is dumped through openings upon a grate a fire at the end furnishes the heat to dry and burn the garbage A second fire in or near the stack destroys the odors from the burning garbage

Let us consider the cost to the different cities using utilization or burning Milwaukee pays $1 18 per ton to have its garbage disposed of, St. Louis $1 32 per ton, New York $89 000 per year, Pittsburg $80,000 per year *this does not embrace collection*

That the destruction of garbage is desirable by suitably built furnaces in the vast majority of cities is unquestionable

The horizontal furnaces have burned of late, at Wilmington 500 tons of garbage with ninety tons of coal or 30 9 cents worth of fuel to destroy a ton of garbage The Davis furnace has burnt forty tons of garbage with one ton of coal, or a record of 6 cents worth of coal for each ton of garbage including the fireman's wages would only amount to, for a day's burning of forty tons $1 50 fireman and $2 15 one ton of coal or $3 65 besides the interest of the plant Whilst the reduction plants want for the same work $52 80 besides the process of reduction is not only more expensive, but the separation of the offensive material is repugnant.

Before illustrating the different systems we would call your attention to the subject of the domestic disposal of garbage There are many towns too small to use a garbage plant but when the disposal of garbage is an important item we might show how this can be done in the ordinary stove or range.

The special committee reported an amendment to the laws allowing any one interested in sanitary matters to join the Association on payment of one dollar yearly with all the rights of any members, and the addition to the name of the Association of the word sanitarians, making it "The Associated Health Authorities and Sanitarians of Pennsylvania" These amendments were unanimously adopted

Dr LEE offered a humorous resolution urging the removal of the constant menace of the filthy condition of Cuba by the proper administration of certain articles After [illegible] discussion on the importance of such a matter a resolution [illegible] presented by Dr Lee

WHEREAS In consequence of entire neglect of the [illegible] authorities in the Island of Cuba to inaugurate [illegible] such sanitary laws and regulations as exist in civilized countries the diseases of smallpox yellow fever and [illegible] constantly prevail unchecked in that island and

WHEREAS In consequence of the proximity of Cuba to the United States and the intimate relations between the two countries, the condition referred to [illegible] ace to the public health of this country, involving the most painful anxiety, considerable pecuniary loss, and in repeated instances serious loss of life, therefore

Resolved, That no settlement of the pending difficulties between the United States and Spain will be satisfactory to the sanitarians of this country which does not insure to the United States the absolute control of the sanitary administration of the Island of Cuba

This was adopted by a unanimous vote

The officers chosen were Crosby Gray, Pittsburg, first vice president, Moritz G Lippert, C E, Phoenixville, second vice president, J B Tweedle, Weatherly, third vice president, Wm B Atkinson, Philadelphia, secretary, Jesse C Green, D D S, West Chester, treasurer

The Association adjourned to meet in 1899 at the call of the Executive Committee

German Congress of Internal Medicine,

April 13, 1898

The President in his address referred to the campaign against Vivisection, which has been revived in Germany, and mentioned as an instance of the non antagonism between vivisection and love of animals, that the physiologist, C Ludwig of Leipsic, is president of the Society for the Prevention of Cruelty to Animals The first session was devoted to "Medical Education" A ten semester course was advocated, with increased facilities for practical technical training in diagnostic methods, laboratory work and general therapeutic methods (dietetics, inhalations, hydro , mechano , electro , balneo and climatotherapeutics), with practical bedside courses The internal clinic should be four semesters, ten hours a week The folly of creating a special chair for any branch of internal medicine or therapeutics was emphasized Leo announced, in his address on "Diabetes," that the new preparation by E Büchner of crushed and compressed yeast, which while filtered free from cells still contains the zymosis, the sugar splitting element, produces a remarkable curative effect on dogs rendered diabetic by being fed with a solution of sugar fermented with yeast until the sugar has vanished The diabetes thus induced lasts several days, and produces great emaciation if long kept up It demonstrates that the elimination of sugar n individuals after copious beer drinking, is due to some oxic metabolic product of the yeast cells Beer, therefore, should be avoided by persons inclined by heredity to diabetes or already affected He urged periodic investigation of the urine and weight in diabetics by the physician, "not the druggist," to determine periodically the capacity for assimilation The "Heat Production in Fever" was attributed by Krehl to the fever producing substances in the circulation An increased amount of organic albumin is decomposed, with the albumin molecule hydrolytically split. The albumoses thus formed, far advanced in hydration, enter the circulation and are eliminated through the kidneys The products of this decomposition of the albumin affect the nervous system as a toxin, especially those points which regulate the innervation of the vessels and the giving out of heat. Less heat is given out and the bodily heat rises Von Ziemssen secures much clearer views by making his fluorescent screen flexible to fit the contours of the body He suggests that a cloth vest might be impregnated with the chemicals and fit still more perfectly

The addresses on "Intestinal Antisepsis" and "Autointoxication" proclaimed the paucity of our knowledge on this subject and the worthlessness of all antiseptics for this purpose They are only kept in vogue by the advertisements of the manufacturers Only one or two voices were raised in dissent to this sweeping condemnation, which leaves only prompt evacuation of the contents of the stomach and intestines for our reliance in intestinal autointoxication Boas remarked that it is usually accompanied by renal insufficiency, and that calomel acts upon both the intestines and the kidneys, while salicylic acid reduces abnormal production of gas He is now studying the relations between the "oxyacids" and the excretions Stern related the results of his investigation of calomel feces They contained so much calomel that in the course of a few hours the bacteria in them were partially or entirely destroyed Fürbringer also expressed his belief in the value of calomel as an intestinal antiseptic. Albu suggested that autointoxication may be due to spontaneous alterations in the physico chemic relations in the blood and organic juices, caused by abnormal metabolic products, such as alterations in the osmotic tension The parallel between exogenic intoxications and the autointoxications *par excellence* diabetes, gout, anemia, suggests that they are more properly disturbances in the intermediate metabolism, intestinal autointoxication is quite different Quincke suggests utilizing the antagonism that exists between different unicellular organisms, and cited his success in treating intestinal putrefaction (with excess of indoxyl and diarrhea) by means of pure yeast, 60 c c, immediately after each meal Sternberg announced that the accessorius is the motor and the cervical branches the sensory innervation of the sternocleidomastoideus Van Niessen described a small streptobacterium which he has found regularly in the blood in syphilis and also in specific progressive paralysis and tabes He ascribes a specific nosogenic importance to it in the probably complex etiology of syphilis Trumpp asserted that cholera and typhus immune serum produce agglutination, which he considers establishes a connection between agglutination and immunity It is not a mechanical phenomenon, but due to some effect on the walls of the bacteria, and immunity may be due to this same effect. Badt stated that 94 per cent. of his fifty three cases of arthritis deformans were women, and in 80 per cent. of these, the affection had commenced with the menopause, to which he is inclined to attribute its etiology The oöphorin tablet treatment recommended by Senator and others for the climacteric disturbances in the circulation seems indicated, therefore, in this disease

SELECTIONS

Medical Charity in New York—Dr Frederick Holme Wiggin of New York, presented to the recent Conference of Charities and Corrections, "An Historical Sketch of the Recent Movement to Restrict the Abuse of Medical Charity in New York." He said that the movement had been inaugurated about eighteen months ago by the efforts of Dr Stephen Smith, recently president of the Department of Charities, and Dr Landon Carter Gray, then president of the Medical Society of the County of New York, who showed that the ratio of those applying for medical aid had risen from 16 per cent in 1860 to about 49 per cent. in 1895 A committee of the County Medical Society, consisting of gentlemen representative not only of the general medical profession, but of the larger teaching faculties in the city, were charged with the duty of investigating the question of the abuse, and if possible suggesting the remedy They found no difficulty in proving the existence of a serious abuse, and consequently their efforts were chiefly directed toward seeking out the remedy It did not take long to reach the conclusion that the evil was largely the result of a lack of proper methods of investigating the financial condition of those applying for medical ~~relief, and that~~ the Charity Organization Society considered it perfectly feasible to systematically investigate all applicants The cost of such investigation, it was estimated, would be about $25,000 the first year, and about $5,000 each subsequent year In the opinion of the Committee, another important factor in the production of the dispensary abuse was the system of charging small fees for the medicines and apparatus, thus leading many persons to feel that they were paying their way As a result of this preliminary study of the question, the Committee felt convinced that the evil could be restricted by attention to these points, and also by making it a misdemeanor, punishable by a moderate fine, for a person to obtain, by reason of false representation as to financial condition, free medical or surgical relief at a dispensary An effort was then made, by means of a circular letter, to secure the co-operation of the managers of the dispensaries, but although more or less definite replies were received from seventy six dispensaries, it soon became apparent that it would be impossible to get the managers of all the dispensaries in this city to voluntarily agree to any general plan The attitude of these managers was clearly presented in the report made to the legislature last January by the State Board of Charities, which says of them "They apparently are not, and have never been in a temper to come to some mutual understanding whereby better conditions shall prevail In a large degree and for various reasons, they have become competitors in business to such an extent that it is probable that nearly half of the inhabitants of New York are now receiving practically free medical treatment" The original committee was soon reinforced by representatives from a similar committee appointed by the New York County Medical Association As a new organization, known as the New York Society for the Advancement of the Practice of Medicine, had already introduced into the legislature a bill intending to rectify some of these abuses of medical charity, and as this bill contained a number of objectionable features, its proposers were consulted, and persuaded to give their consent to the substitution of another bill that had been prepared The main features of the latter or the first "dispensary bill" were 1, forbidding the establishment of a dispensary in a drug store or tenement house, 2, requiring all dispensaries to be duly incorporated and to be licensed by the State Board of Charities, 3, providing that persons shall not obtain relief from dispensaries by false representations, and that a violation of this act shall be a misdemeanor, and 4, empowering the State Board of Charities to make rules and regulations, and to annul or suspend incorporations, and to revoke licenses The bill having received the endorsement of the State Board of Charities, it was passed unanimously by both houses of the legislature, but did not become a law owing to the failure of the executive to approve it Between this time and the opening of the legislative session of 1898, the subject was freely discussed, not only in the medical societies, but by both the medical and lay press and the following medical societies endorsed the plan of appealing to the legislature to limit the abuse of medical charity The New York State Medical Association, the Medical Society of the County of New York, the New York County Medical Association, the New York Medical League, the New York Society for the Advancement of the Practice of Medicine, the Medical Society of the County of Kings, the Kings County Medical Association, the Brooklyn Medical Society, the Brooklyn Medical Association and the Long Island Medical Society Representatives of these societies formed a joint committee which, after much careful investigation, prepared the outline of another bill, which was milder in character, and which seemed to eliminate the features which had been considered objectionable in the previous bill Before its representation to the legislature, this outline was submitted to the revision committee appointed by the Governor for the purpose of revising or preparing bills, so that they shall be constitutional and shall not conflict with existing laws

The essential points of difference between the second bill and this one were 1, in the new bill the definition of a dispensary was limited to such institutions as derived their income, wholly or in part, from trust funds, public moneys or sources other than the individuals constituting the dispensary and the persons actually engaged in the distribution of its charities, 2, in the new bill the State board of charities was given control over dispensaries by empowering it to grant licenses to such institutions as, in their judgment, would be for the public benefit, 3, in the new bill, the board was given the power to revoke licenses for cause, after a public hearing, instead of as in the previous bill, the power to annul the act of incorporation It seemed to the framers of the measure that if the existing abuse of medical charity was to be controlled, the first requisite was an impartial body, which should control and make rules and regulations for the government of all institutions seeking to relieve the sick poor Such a body is provided for by the legislature, under the constitution, in the State board of charities, and its powers are such that they would require to be but very slightly extended to allow this board to assume control and supervision of the dispensaries of the State by issuing and revoking licenses This revised dispensary bill was very generally and favorably commented upon by the daily press at the time of its introduction into the legislature in the early part of the session At first, the bill met with scarcely any opposition in the legislature, but when it was favorably reported by the committee on public health of the senate, to whom it had been referred, such vigorous protests were received by the chairman of that committee, that provision was made for a joint hearing of the friends and opponents of the measure, before the senate and assembly committee on public health After full arguments on both sides, the senate committee reported the bill favorably to the senate, which passed it with only two negative votes, but the public health committee of the assembly failed to report the measure to the assembly, although vigorous efforts were made by its friends to secure a favorable report. The measure was therefore smothered in committee, and failed to become a law

Operation for Hour-Glass Contraction of the Stomach from Gastric Ulcer—Mr Watson Cheyne has had an important case at the Kings College Hospital of the above nature, with operation followed by recovery The hour glass condition of the stomach is not very infrequently met with at a necropsy, but is certainly rarely that it can be diagnosed clinically The surgeon holds the opinion that the Heineke Mikulicz operation which he performed was the most suitable under the circumstances As more than three and a half months have elapsed since the operation the hope that the patient is permanently relieved seems fully justified A married woman, aged 46, was admitted to the hospital on November 8 About six years ago she began to suffer with great pain in the hypochondriac region and in the right shoulder and, in fact, with all the symptoms of ulcer of the stomach with the exception that she had at that time no hemorrhage She was treated for this condition by diet and in various other ways, and had suffered much from time to time, but latterly the symptoms had been those of obstruction She was emaciated and feeble and had almost daily vomiting Her diet had of late been entirely a fluid one Examination showed a moderate amount of gastric distention that was not uniform On listening with a stethoscope over the middle of the stomach region, a gurgling could be heard from time to time as if fluid was running through a narrow orifice, and Dr Burney Yeo, who saw the patient in consultation stated that in his opinion the case was one of hour glass contraction of the stomach, resulting no doubt from an old ulcer On December 1 a vertical incision was made over the stomach, in the middle line, about four inches in length, and when the peritoneal cavity was opened the stomach was drawn out of the wound, it was then found, as had been expected, that just above the center of the stomach there was an hour glass contraction The stomach, especially toward the cardiac end, was very considerably dilated and there was also some dilatation toward the pyloric end The contraction was very marked and when it was laid open it was found that the communication between the two portions of the stomach was extremely small as a matter of fact, a crow quill could hardly have passed through There was a good deal of scarring and cicatricial tissue in the neighborhood and at the actual point of the contraction there was no mucous membrane at all An incision was made through this contracted portion in the line of the stomach so that the ring of cicatricial tissue was divided transversely, this incision was extended into the healthy parts of the stomach for about one and a half inches on each side, and then the angles of the incision were brought together and the rest of the part sewn up, first with a few stitches which went through all coats of the stomach and then with a row of Lembert's sutures, in fact, the operation performed was identical with that employed in cases of contracted pylorus under the name of pyloroplasty After the operation was concluded an opening was left between the two portions of the stomach, which could readily take a couple of fingers The wound was then stitched up and the patient put back to bed she was not very much collapsed after the operation The wound healed by first intention and the patient went on very well After about a fortnight she was allowed to have solid food She was discharged on January 7, having gained eight pounds since her admission, and she stated that she felt better than she had felt for many years, this improvement still continues She is still somewhat troubled with flatulence, but beyond that her condition is practically normal She still continues to gain weight The interest of the case lies first in the diagnosis that instead of being a pyloric obstruction as had been supposed by other physicians, it turned out to be a typical hour glass contraction of the stomach The diagnosis chiefly depended on the absence of the marked dilatation of the stomach which would occur in pyloric constriction and in the bubbling of the fluid through a narrow orifice which was heard not in the situation of the pylorus, but about the center of the stomach The further point of interest is in the treatment One was very much tempted to excise the contracted portion of the stomach altogether and stitch the walls together on each side and no doubt that would have been followed by complete recovery without any risk of recurrence of the contraction, for it must be admitted that there may possibly be an increased contraction still and some recurrence of the symptoms but the patient was in an extremely feeble condition and it did not seem justifiable to subject her to the prolonged operation which would have been involved in this procedure *London Lancet*, March 19

PRACTICAL NOTES

Gastro-enterostomy for Non cancerous Stenosis —H[illegible] reserves this operation for a last resort after the failure of all medical measures except in the case of the poor for whom rest, and proper diet are impossible The hyperacidity will usually disappear if the opening into the [illegible] If bile flows back into the st[illegible] to a certain extent, so that the ideal operation prevents any retention of food in the stomach and any regurgitation of bile —*Bull de l'Acad de Méd*, April 5

Condurango as an Analgesic in Gastric Pains —The pain accompanying ulcer and cancer of the stomach, etc, can be quieted by administering five to eight pills a day containing ten centigrams each of condurango bark It often prolongs the life of the patient by facilitating alimentation Lemoine believes that the condurango, like coca leaves, contains some alkaloid or glucosid, which exerts an analgesic action upon the gastric mucous membrane It has almost invariably relieved his patients during an experience of several years —*Semaine Méd*, May 18

Bernay's Sponge as a Hemostatic —At the last annual meeting of the American Laryngological Association, held in Brooklyn, N Y, May 16, Dr W K Simpson of New York demonstrated the use of the Bernay sponge, which he maintained would swell to fifteen times its size and absorb twelve times its weight of liquids Its efficacy in general surgery he claimed to be due to the absorbing power, acting as a cleansing agent and then serving to pack the wound This sponge consisted of cotton fiber subjected to many hundred pounds of pressure and compressed to a disc one sixtieth of an inch in thickness It was especially adapted for use in the nares, was an excellent splint for the later stages of Asch's operation for deflected septum and could be used as a means of conveying medication to various parts of the nose

The Hernias of Children —Dr W B Coley states that in upward of 300 operations for hernia in children under 14 years of age, he has had but one death, and that was from pneumonia In seven operations in children under two years of age there was but one death, the patient being moribund at the time of operation Bassini's method of operation is preferred In four cases out of seven the cecum was found in the sac Strangulation in infants is more common than is generally appreciated, and not infrequently arises from the bad advice to postpone wearing a truss until the age of one year As to treatment, gentle taxis should be tried for one or two minutes, if this fails, applications of hot cloths should be made for them for from fifteen to twenty minutes, followed by taxis under chloroform, after all preparations for operation have been made If this also is unsuccessful, immediate operation is to be undertaken An attempt at radical cure can, in the great majority of cases, be made with safety —*Archives of Pediatrics*, April

Conservative Manipulation by Gynecologists Advised —Dr Howard Kelly has contributed to the *American Journal of Obstetrics* an article upon the needlessness of lacerating the hymen for the majority of gynecologic ailments He speaks feelingly of the frequency with which the hymen is utterly disregarded, and attributes a much greater want of thought in this respect to female than to male practitioners He urges that no one but an acknowledged expert should examine a virgin, basing his opinion upon the fact that delicacy of touch is needed to avoid lacerating the hymen, and upon the infrequency of any serious gynecologic lesion in this social condition He then describes his method of examining virgins He urges that while a skilled man can usually make a bimanual examination without lacerating the hymen, the latter is so frequently injured by the unskilled that most men should confine themselves to the use of the rectum in virgins, and that the patient should always be anesthetized and after anesthesia should be raised into the knee chest position and held there while air is admitted to the vagina and rectum If she is then placed upon the back there should be no obstacle to the performance of a most satisfactory bimanual examination through the rectum He describes a speculum which he has devised for use in the knee chest position under anesthesia, in virgins This speculum is closely similar to well known Kelly vesical specula, but is fitted with a beveled end in order to avoid the necessity of using an obturator

Amyloform and Dextroform —A new substitute for iodoform has recently been prepared by Professor Classen of Aix la Chapelle, which he names "amyloform," and which consists of a combination of formaldehyde with starch It occurs as an almost impalpable white powder, devoid of all smell and insoluble in ordinary menstrua In contact with the tissues of the living body, however, it breaks up, and when it was applied to extensive suppurating wounds formaldehyde could be detected in the purulent discharge At the same time the urine was proved to be quite free from it by distillation with dilute sulphuric acid and the addition of fuming sulphurous acid, so that whatever formaldehyde enters the system must be fully oxidized therein However much amyloform is applied no toxic symptoms are produced, though a slight and transient smarting sensation is sometimes complained of locally The clinical effect of the substance is very similar to that of iodoform, only it is frequently more pronounced In a number of cases of deep wounds with suppuration of bone from osteomyelitis or tubercle, a quantity of the powder very liberally applied caused the suppuration to cease in a very short time, in some instances where iodoform had previously been tried without much result In varicose ulcers of the leg and in the primary sore of syphilis amyloform also proved useful The above clinical observations were made by Bongartz in the Mariahilf Hospital, Aix la Chapelle It has been mentioned that amyloform is insoluble, but a very similar substance has been prepared from dextrin instead of starch, which Classen calls "dextroform," and this is dissolved without much difficulty by both water and glycerin Its 5, 10, or even 20 per cent solution has proved very useful, as in injection in gonorrhea, and the former of these solutions has been employed with success for washing out the cavity of an empyema Internally the solution has been prescribed with advantage in a case of cystitis —*Lancet*

Electric Light in Rheumatism and Neuralgia — Kozlovski, in *Vrach*, has published an account of his treatment of rheumatism and neuralgia by means of exposure to the electric arc He was induced to make these observations by the statement of Ewald, who is medical officer to some large iron works, that he had noticed that since the introduction of the system of electric welding there had been a notable diminution in the number of cases of rheumatism, neuralgia, migraine and other nervous diseases among the workmen, which he attributed to the beneficial effect of the electric light In order to bring this therapeutic agent within the reach of ordinary patients, Kozlovski has fitted up a consulting room with a suitable plant for producing the electric arc, which consists of a six horse power oil engine, a dynamo, thirty five Tudor accumulators, a rheostat, ampère meter and electric arc lamp with reflector With these he obtains an electromotive force of 50 to 60 volts and a current of from 250 to 300 ampères The patient is placed at a distance of one and a half meters from the light and protected by blue spectacles and also by a screen of cardboard in which an aperture is cut to allow the light to fall on the affected region of the body To this it is exposed for from three quarters of a minute to two minutes The patient feels a slight sensation of heat, though the temperature is never raised more than 4 degrees F, where the light falls on the skin, but nothing more until six or eight hours afterward, when itching and tingling are felt and the skin becomes reddened Some forty eight hours later, desquamation occurs, which lasts for two or three days In the course of three months Kozlovski has treated thirty eight patients, varying in age from 13 to 70 years, by the electric light There were eight cases of sciatica, all of which recovered, four of neuritis (locality not stated), two of which recovered, eighteen of chronic rheumatism, fourteen of which recovered, three of lumbago all of which recovered, three of occipital neuralgia, of which two recovered, and two of trigeminal neuralgia, one of which was greatly benefited In most cases three or four sittings produced an amelioration of the pain They were continued at intervals of three or four days, according to the amount of cutaneous irritation, but the total number of sitting never exceeded a dozen

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SATURDAY, JULY 2, 1898

BUBONIC PLAGUE IN BOMBAY

The plague has always been an interesting field for the litterateur as well as the scientist The animated description of DE FOE, the child-like simplicity of PEPYS, have made accounts of the ravages of the frightful plague entertaining, and so far as science is concerned it is only necessary to look at the vast number of titles in the Index Catalogues of the Surgeon-General's office to see how much has been written on the subject of the plague Many of the interesting points in the story we are in the habit of relegating to the past, and to think of these as having occurred at some time during the back ages, but by a report printed in our day we are brought face to face with the same conditions, the same panics, the same disturbances as those which characterized the plague days of the fifteenth and seventeenth centuries

KHAN BAHADUR DOCTOR CHOSKY, in his report on the Bubonic Plague at Arthur Road's Hospital, Bombay, says "The first plague patient was admitted on the 24th of September, 1896, and two more following before the end of the month In the month of October there were 85 admitted, which gradually increased until there were 182 admitted in December, 277 in January and 365 in February This taxed the hospital to its utmost capacity, as naturally enough with the increase of inmates there must be a comparative increase in the servants and assistants

Dr CHOSKY further says

"Every effort was therefore made to secure additional servants, but in spite of the continuous efforts of the authorities to procure them even on double or treble pay, the greatest difficulty was experienced There was extreme reluctance on the part of men, who had never been in their lives inside a hospital, to take service, especially in a plague hospital and when asked, they *openly* said that they would not endanger their lives under any consideration some, however, were induced to join but only worked for a few hours or days and then ran away, never even coming to claim their wages The number and the frequency of deaths, combined with the delirious condition of patients, used to frighten them and indeed the sights and sounds of a plague ward in the dead of night, with the groans and moanings of the delirious patients, were enough to appal the stoutest heart *Old* servants could with difficulty be induced to remain, and a majority of them on that account went on strike and refused to work All of them were given a bonus to make them continue in service, and their pay all round had to be increased They were asked to induce some of their own friends to take up work in the hospital, but to no purpose They used to come, work for a short time and run away as before Pay however large was no inducement They had never seen so many people dying as they did in the plague for the largest number died at the Arthur Road Hospital, both because of the numerous admissions and because so many cases were brought in a moribund condition It was not until March, when the epidemic commenced to decline, that a considerable number could be induced to join, and strange to say among the latter were some people who had attended their sick friends in the Hospital "

There were three Hospital Assistants who worked practically night and day, Dr CHOSKY himself putting in from six to seven hours' work every day

"Apart from these difficulties," says the Doctor, "the Hospital had to contend against the ignorance and prejudice of the people, always averse to going to a hospital, and more so when *sent there against their will and under compulsion* Time after time patients in a moribund condition were brought to the Hospital, to whom no relief could be given, as they were practically past all help and they came simply to die the Hospital getting all the popular discredit attached to the heavy mortality Nearly one third of the total admissions during the six months died within twenty four hours of admission, by far the greater number dying within a few hours and some even within a few minutes At times patients were found dead when brought to the Hospital in ambulances, and the corpses were sent direct to the burning grounds Added to this heavy mortality, the means used to resuscitate and support their strength especially subcutaneous injections, were misconstrued, and it was openly said that the doctors were killing the patients in order to stop the further ravages of the epidemic It was also freely stated that the patients were purposely killed and their hearts taken out in order to send them to Her Majesty, the Queen Empress, to appease her wrath on account of the disfigurement of her statue, which occurred in the beginning of the epidemic All this culminated in a raid on the Hospital in the forenoon of 29th of October, 1896, when a large number of mill hands, estimated from 800 to 1000 rushed toward the Hospital, breaking open the gates and scaling the walls with a view to wreak their vengeance on the Hospital staff for the alleged killing of patients Road metal was freely thrown at the Hospital staff, some of which reaching the wards broke the tiles and injured some patients, but fortunately no one was seriously hurt on learning that the police were approaching the men dispersed in all directions An armed police guard had to be quartered on the premises for a long period and Arthur Road which is one of the main roads leading to the mills was patrolled by mounted and foot police for a considerable time after the raid The Hospital [illegible] were openly threatened with violence they dared not go out of the compound for their meals [illegible] unless [illegible] by policemen in plain clothes and it was under such condithat the work of the Hospital was conducted for some two months "

The usual crop of charlatans seemed to develop, following in the wake of the victims of the plague like vultures after a battle The report says

> "The plague epidemic had suddenly created in our midst a host of pseudo specialists who pretended to know all about the plague and who for a time, forgetting their usual avocations of tramway conductors, railway guards, engineers, postal inspectors, clerks, etc , suddenly blossomed forth into plague specialists, vaunting their nostrums day after day, and pestering the health officers as well as the medical officer of the hospital Then again, the permanent quacks had their specialties, and in some cases even duly qualified medical men, who ought certainly to have known better, came out with strings of prescriptions and specifics with the view of obtaining a fleeting notoriety "

Being in India instead of America, we suppose the Doctor was spared the spectacle of seeing photographs of these people staring at him from every edition of the daily newspapers

Of the hospital staff the assistant medical officer, Dr P N DAVDA, and three ward boys were attacked with the plague Dr DAVDA unfortunately died, notwithstanding the naïve remark in the report (page 45), in speaking of preventive treatment "None of the hospital staff were inoculated with Professor HAFFKINE's preventive serum The late Dr DAVDA had, however, 10 c c of Dr YERSIN's serum injected as a preventive about three weeks previous to his illness "

Preventive treatment in the hospital was directed toward lessening the risk of infection among the hospital staff and ward attendants who came in contact with the sick Free ventilation, frequent disinfection of the hands, frequent changes of clothing were required Floors were sprinkled with chemic disinfectants The clothing and other belongings of the patients were destroyed by fire, and it may be assumed that this treatment was successful inasmuch as but three of the attendants had the disease As to the different methods of treatment, the author is of the opinion there is no specific treatment

In regard to postmortem appearances, the author says "If it were possible to convey in one word the principal postmortem signs of the changes that are found in the system, that word would be hemorrhage Hemorrhages in every conceivable and inconceivable part of the body "

Our space is too limited to quote more from this very interesting report, a report which deals with the total number of cases, 939 in the short space of five months, a report so evidently written from a full knowledge of the disease that it will be turned to for many years to come as an authoritative treatise on the plague, therefore in sharp contrast with the emanations from the public press on this subject purporting to come from a certain official sanitary bureau, photograph of the incumbent duly attached

INHERITANCE OF CIRCUMCISION EFFECTS.

No question in biology has been discussed with more animation than that of the transmission by heredity of acquired defects Prominent among those who denied hereditary transmission of acquired effects was WEISMANN His writings have been received with much favor and he has won a very numerous following The effects produced by his criticisms have been undoubtedly beneficial in removing from certain ideas of heredity their crudeness The older notions of heredity were much more vague and at the same time more sweeping than those held by modern biologists WEISMANN'S followers have cleared up much obscurity, but at the same time by too intense devotion to a theory have added even more WEISMANN for example rides the germ hobby to death, in his attempt to explain the transmission by heredity of traumatic epilepsy in guinea pigs He assumes that epilepsy is always of microbic origin The reason therefore that the mother most transmits epilepsy is because the ovum being larger than the spermatozoon it necessarily carries more microbes of epilepsy than the latter As his explanation fails to demonstrate that epilepsy is of microbic origin, it utterly fails not merely to exclude all other hypotheses but even to explain the facts themselves This is a fair illustration of the weakness of WEISMANN's position in regard to the transmission of acquired defect

Indeed such evident transmission has forced him to a concealed though rather complete reversal of his absolute position on the subject In his latest work ("The Germ-Plasm," p 535) he admits that nutrition of the germ plasm will modify heredity As nutrition of the germ-plasm depends, according to WEISMANN on the state of nutrition of the spermatozoon and the ovum it is obvious that this must depend on the state of nutrition of the male and female producing these It is therefore evident that the state of mental and physical health of the parents will modify the offspring despite the tendencies to continuity of the germ-plasm on which such stress has been laid by WEISMANN One of the "facts" on which the strongest stress has been laid by WEISMANN and his followers as an argument against hereditary transmission of defects, is that of circumcision WEISMANN admits it is certainly true that among nations which practice circumcision as a rite ("Heredity," Chap 8), children are sometimes born with a rudimentary prepuce This however, according to WEISMANN, does not occur more frequently than in other nations where circumcision is not practiced as a rite The truth of this last assertion is seemingly supported by instances recently appearing in the literature P C REMONDINO of Los Angeles, California, has seen a large number of cases ("Circumcision") of prepuce absence in Hebrews which prove to be hereditary After one confinement in a Gentile his attention was called to the child by the nurse, She thought it was deformed because of the size and appearance of the glans penis On examination the prepuce was found to be completely absent On inquiry the father, and another son born more than two decades previously (these comprising every male member of the family), were found to have been born with the glans fully exposed Remondino has seen a French family in which there was similar heredity

The statements about the non-transmission by heredity of circumcision effects have been so strongly reiterated that it is hardly astonishing that they were long accepted and the non-inheritance referred to the healthy atavism of the maternal side Of late these assertions of Weismann and others as to circumcision non-inheritance have been questioned Dr William Wolfe of Baltimore some years ago (*American Medico Surgical Bulletin*, 1895) reported as the results of long research that two per cent of the Hebrews coming under his observation were born without a prepuce, and that a much larger proportion had defective ones Stimulated by his researches Dr Eugene S Talbot of Chicago was led (*Medicine*, June 1898) to institute an inquiry as to the conditions of the prepuce found by the Hebrew clergymen of Chicago engaged in performing the religious rite of circumcision He found that the percentage obtained by Dr Wolfe was not as great as that occurring in Chicago He obtained results from the Rev Drs S Bauer, M A Cohen and B Gordon Dr Bauer had circumcised 3400 and found that the prepuce was absent in 3½ per cent of the cases Dr Cohen had circumcised 10,000 times He had found the prepuce absent in 500 cases, partially developed in 300 cases and slightly developed in 2000 cases Dr Gordon had performed 4400 circumcisions in 25 years He had found the prepuce absent in 150 cases, partly wanting in 200 and slightly developed in 2200 These, it should be remembered, were cases where preputial deformity casually forced itself on observers who were not pursuing special investigations as to the inheritance of the results of circumcision

Considering the emphasis with which the non-inheritance of the preputial effects of circumcision has been reiterated, the most astonishing result of Dr Talbot's researches was the discovery that rabbinical literature contained disputes on the subject of the religious treatment of cases where the child had been born circumcised There was very early a difference of opinion on this subject between the schools of Shammai and Hillel The school of Shammai maintained that if a child be born circumcised it is still necessary to draw from him the dram of covenant blood, the school of Hillel maintained that this was not necessary According to another authority this point was not involved in the discussion since both schools were of the opinion that where a child had been born circumcised the drop of the blood of the covenant had still to be drawn from him on the eighth day The dispute related however to an adult proselyte who happened to have been born circumcised In this case the school of Shammai insists upon the ritual drawing of blood The school of Hillel claims that ritualistic drawing of blood was in such case unnecessary

In the Medrash (the homiletic commentary of the Rabbis on the Old Testament) nearly every prominent man mentioned in the Bible as well as some of the later prominent rabbis, are stated to have been born circumcised Among these were Moses, Samuel, Isaiah and Rabbi Akibah The law relative to children born circumcised was codified 1567 A D, in the Schulchan Aruch Joreh Deah, Hilctroch Milah, Beth Shammai and Beth Hillel quoted in it flourished between 70 B C and 70 A D These results of Dr Talbot render it clear that not only does circumcision produce inherited defects more frequently among the Hebrew than among other races which do not practice circumcision but that this has occurred to such an extent that the treatment of such cases has long been recognized as a subject for discussion in the religious literature of the Hebrews

REGIMENTAL HOSPITALS IN FIELD SERVICE

As a people we are learning by experience that it takes time to turn out a volunteer army of 125,000 men fully armed and equipped Early in April, when the war cloud was gathering, we read in our newspapers about the active work of preparation going on in the armories, and how this and the other regiment was ready to take the field at an hour's notice In fact, we were led to believe that when the call to arms should sound the quota of each State would be ready to fall in And grave doubts arose in our mind as to whether, in the short time that would be needful to form the regiments into brigades and divisions for purposes of field command, the medical department would be able to put itself on a fighting basis with field hospitals and ambulance companies properly manned and efficiently equipped We were aware that however well drilled a company or regiment of citizen soldiers may be, some little time in a camp of instruction is needful before they can form an efficient part of an army Besides purely military drills, the men have to learn how to live in canvas shelters carried by themselves, and even how to cook for themselves when the wagons can not come up with the mess-chests and camp-kettles, and the officers have to learn how to utilize the army ration that their men may have as full and varied a diet as may be found in the company messes of our regular troops But we doubted whether the time required for these purposes would suffice to enable our military brethren to get ready their system of organized relief for the sick and wounded of a large army

However, the mustering in of the men, associated as it was with a strict medical examination, took much longer than was anticipated, and when mustered in and transported to war camps at Chickamauga and Washington, and even nearer their possible battlefields, as at Tampa, Fla , it was found that there was still much to be done that must consume time before the regiments could be considered fit to undertake the field duties of soldiers Meanwhile the Medical Department has been utilizing the time to the best advantage The hospital corps has been recruited by enlistments and transfers from the line, medical and hospital supplies have been provided, ambulance wagons have been built and distributed and the organization for field service has been progressing on the lines outlined by us in the Journal of May 21 Lieut.-Colonel B F Pope, U S Vols. (Major and Surgeon U S A), chief surgeon of the Fifth Corps, at present before Santiago de Cuba, has perfected his organization and is ready to meet any of the emergencies of military life in time of war The troops of this corps are mostly regulars and their medical officers are accustomed to obey orders, so that Chief Surgeon Pope has found it an easy matter to perfect his organization

It is not so, however, with Lieut.-Colonel A C Girard (Major U S Army), chief surgeon of the Second Army Corps at Camp Alger, Falls Church, Va In our recent discussion of the subject of organization we showed that the regiment is too small a unit on which to build a satisfactory medical service for the care of the wounded of a great battle The regimental hospital is an excellent institution when a regiment of the National Guard goes into camp for a ten days' summer picnic, or even when called out for duty as a State public force, but it is valueless when an army corps of twenty-seven regiments is drawn up in line of battle Wherefore, when the new regiments arrived at the camps of organization and instruction, the duty of the chief surgeon was to prepare the medical department of the corps for field service by breaking up the regimental hospitals and organizing the medical relief by divisions The Second Army Corps consists wholly of volunteers and certain of the regimental medical officers have taken exception to Dr Girard's efforts to prepare them for war service They object to having their hospitals broken up and their regimental medical service turned into a mere dispensary service, although the seriously sick receive the best medical attention which the division can provide Yet some of the volunteer colonels have espoused the cause of their medical officers and protested to the War Department against the change of method This action of local commanders has so emboldened one of the medical officers that, according to newspaper accounts, he has declared that his hospital shall not be broken up until the whole military strength of his State has been overpowered

It is to be regretted that medical men who have voluntarily offered their services to aid the Medical Department of the Army in caring for the sick and wounded of the war, should be the obstacle to a proper organization by their failure to recognize any conditions in the present different from those of the summer picnic, but fortunately this difficulty in the Second Army Corps appears to be an isolated experience, for we have heard of no trouble in the organization of the medical departments of the other corps of the Army

CACHEXIA OF MALIGNANT TUMORS

The condition of emaciation, anemia and general prostration which accompanies many of the malignant tumors was formerly believed to be a specific symptom of the disease and was called cachexia Even earlier, the condition, under the general name of a dyscrasia or diathesis, was supposed to precede and induce the growth of malignant tumors At the present day as well, cachexia is considered by many to be one of the essential symptoms of a malignant growth, yet this opinion must be much modified in the light of observations made upon any given series of patients suffering from malignant tumors

Cachexia is a term also used to express the condition of patients suffering from a variety of chronic general diseases, such as insufficient food, chronic septicemia or intoxication, leukemia, Addison's disease and anemia In these diseases there is a general disturbance of metabolism which is chronic in its course and unassociated with temperature There is an excessive waste of proteids and fats in all of the organs of the body with a resulting condition of malnutrition and weakness, fat disappears from the body, the blood is altered in its composition to produce a pale, anemic appearance to the skin, edema may be present, the patient is feeble and emaciated and the prostration may become extreme These symptoms are the same that are assigned to the cachexia of malignant tumors, and, in a study of those malignant cases in which cachexia is present, it will uniformly be found that there is, either some interference with the proper nutrition of the patient by reason of the location of the tumor, or there is an absorption of deleterious materials, a chronic intoxication from ulceration, sloughing or degeneration in the tumor

The most typical examples of cachexia, it will be remembered, are seen in cases of carcinoma of the stomach, esophagus and intestine, where the assimilation of food may be almost entirely prevented As has been previously stated, insufficient food alone may produce a condition of cachexia, and it is easy to understand how a carcinoma of the esophagus or pylorus, no larger than a walnut, may produce a total obstruction In carcinoma of the body of the stomach a similar malnutrition is present, because very little nitrogenous food can be digested in the absence of free hydrochloric acid and rennet A fact in favor of such dependence of the nutrition upon diet is found in the marked decrease of the cachexia after a gastrostomy has been performed for carcinoma of the esophagus

Secondly, those cases of cauliflower carcinoma of the cervix, ulcerating carcinoma of the breast and huge sloughing sarcomata, form another class giving prompt and decided cachexia In such cases it is a plain surgical question of septic intoxication by the toxalbumins of the bacteria of decomposition, which are developing in the necrotic tissue, and it is a fact that, when such a mass is freely curetted away and the field maintained aseptic, as is possible in the inoperable cauliflower carcinomata of the cervix, the symptoms of cachexia disappear Furthermore, from such ulcerating surfaces there is a continuous discharge and this escape of albuminous material from the body must act injuriously on the system

The pain accompanying many forms of malignant tumors often deprives the patient of his sleep, and the mental worry together with the universal horror of cancer must contribute much toward the failing nutrition The demands made by the rapid growth of such tumors upon the nutritive supply of the body can not have a very great influence upon the general body nutrition, because the drain made by the simple growth is not, under ordinary circumstances, very considerable It must be remembered that, clinically, the most malignant of tumors do not, as a rule, give rise to cachexia, unless they have undergone degenerative change or are so situated as to prevent food assimilation Patients the subject of operation for a third extensive recurrence, or in the presence of tumors of long standing, usually have no cachexia when such conditions of degeneration or obstruction are not present

Whether the tumor itself manufactures substances which are poisonous to the body in general is unknown Rindfleisch assumes that the normal epithelial cells aid in the elimination of certain chemic substances from the system When, however, these cells are enclosed in spaces in the interior of the tissues, as in cancer, the substances can not be thrown off, and at the same time the products of the degenerative processes that are going on in the growth are carried into the circulation, and they exert a poisonous influence upon the blood

THE IMPORTANCE OF CLOTHING IN WAR

Medical men on reading the heading of this article would naturally think that we purposed referring to texture, porosity, conductivity, and with Cuba and the Philippines constantly in mind, to the importance of protection from chill, but clothing is important from another point of view as was brought to our notice by a column in the *Daily Mail* of May 11, 1898, on "Why British Officers in India are so Often Killed" Captain Norton, M P, holds that as these officers wear a different head dress from that of the native officers and troops under them, they are rendered especially distinguishable to the enemy's marksmen This danger in modern warfare has long been recognized in Europe, but in native regiments in India where all but the English officers wear an Eastern head-dress while the pith helmets of the latter are a fatal distinction It is gratifying to know that the needful protection has been given to our Volunteer officers on field service General Orders No 39, of May 9, 1898, from the Headquarters of the Army, prescribe a light brown blouse of cotton drilling or khakie, with trousers of the same color, for all commissioned officers from the major-general commanding down As the campaign hat is similar to that worn by the enlisted men, and the insignia of rank require close inspection for their detection on the collar and flat strap on the shoulder, the officer, from the point of view of the enemy's marksmen, is indistinguishable from his men This will have an important bearing on the make-up of the nominal killed and wounded when such have to be rendered by the medical officers of our Army

THE ROENTGEN RAY IN WAR SURGERY

The English papers of May 21 give considerable space to a lecture delivered on the previous day before the Royal United Service Institution by Surgeon-Major Beevor of the army medical staff The object of the lecturer was to give his experience in the working of the X-ray in military surgery, and to show by the results obtained in the recent frontier expedition in India that the apparatus can be carried on a campaign and be of the greatest possible benefit to the wounded He maintained, in view of his success, that it was the duty of every civilized nation to supply its wounded in war with an X-ray apparatus, among other surgical aids, not only at base hospitals but close at hand wherever there might be fighting There is no doubt of the desirability of having this aid in field hospitals nor of the possibility of furnishing it for the field hospital of a particular expeditionary force, but we doubt the ability of any army medical department, with our present experience af the X-ray, to have it available in the field hospitals of a large army during the hours of activity that follow the incoming of the wounded from a great battle Surgeon-General Sternberg has provided the apparatus for the Philippine expedition, for the hospital ship *Relief* and for the general hospitals to which the wounded from the field hospitals will be sent for treatment, and the experience thus gained in its applicability to war surgery may lead hereafter to a further extension of its use on l [illegible] ded in war

CORRESPONDENCE

WAR CORRESPONDENCE

BY LIEUT -COL NICHOLAS SENN, U S VOLS ,

CHIEF SURGEON SIXTH ARMY CORPS

CHICKAMAUGA, GA , June 22, 1898

CAMP GEORGE H THOMAS

From early dawn until taps, Camp Thomas is the scene of a busy, active life It is the gathering point of the largest army concentrated in one place since the War of the Rebellion It is at the present time the temporary home of 45,000 men representing almost every State in the Union Many of the regiments are short of their quota, and recruits to the number of 500 on an average arrive daily to complete the organization of the regiments now in camp The commander of the whole army in camp is Major General John R. Brooke, General in Chief in charge of the Department of the Lakes He came here from Chicago with his entire staff He enjoys the reputation of being a strict disciplinarian who does everything *through the legitimate military channels* The *greatest* sources of confusion and consternation to the officers of the volunteers from civil life are these mysterious military channels which extend from the General's tent to the heads of the many departments in Washington One of the blue books in constant use by officers, high and low, young and old, is the U S Army Regulations, 1895 The thousands of questions asked the professional soldier daily by his less informed volunteer officer are answered more often than otherwise by "Study the Regulations, *Study the Regulations*, STUDY THE REGULATIONS" Such advice, as a rule, is more easy to give than to follow with any expectation of approval at headquarters The experience here has satisfied me more than ever that the National Guard officers need more thorough training in executive, *clerical work, so essential in the efficient management of* troops at home and in the field. One of the common sights in camp is to see an officer *hide himself* away under a solitary and pore over a work on tactics or the much feared "Reg ions" If this war does nothing else but demonstrate our people and to the legislators, State and National, he necessity of a well organized militia it will have accom lished a great deal If we had in this country, as we ght to have, a well organized, well equipped militia force of 0,000 men, we would have been in possession of all the Spanish islands and Spain itself, if we wanted it, long ago As it is, it takes two millions a day and the hardest kind of work to bring our volunteers into fighting trim The officers of the regular army have reason to be thankful to Spain for having given them a chance to fight They have been looking a long time anxiously for such an opportunity They are the recognized salt of the army The Government *has fully recognized* their claims Nearly every day the newspapers bring columns of names of lucky officers who have been advanced in rank, in fact it seems almost impossible for any one of them to escape promotion of some kind This is probably as it should be, but occasionally such promotions lead to giddy heights To make a lieutenant colonel out of a second lieutenant of very limited practical experience is a transition of doubtful propriety and often followed by the most detrimental results, both to the over ambitious officer and the over confiding troops placed under his charge Officers thus honored by promotion and assigned to the army of volunteers are, as a rule, more anxious to change the shoulder straps than to add the V to the U S on the collar of the blouse On the whole, the regular army officers are perfect gentlemen and great favorites in the camp, and the feeling between them and the officers from civil life is of a most cordial nature

The First Army Corps under General Brooke is nearly completed The Third Army Corps under command of Major General Wade is nearing completion The Sixth Army Corps is soon to be organized under Major General James H Wilson General Wilson gained an enviable reputation during the late war as a dashing cavalry officer and will undoubtedly make a creditable record during the present war if it lasts long enough to bring his army into the field. Lieut Colonel Hartsuff, an experienced medical officer of the regular army, is Surgeon in Chief of the army gathered here, and as such is attached to the staff of General Brooke Lieut Colonel Van Hoff is Chief Surgeon of the Third Army Corps, and has worked incessantly in completing the organization of the medical department under his supervision He is regarded as one of the ablest executive officers of the medical service, and is known as a warm friend of the medical officers of the National Guard He has from the very beginning taken a deep and active interest in the work *of the Association of Military Surgeons of the United States* Every medical officer of the Third Army Corps should consider it a great privilege to serve under Lieut Colonel Van Hoff The medical department of the First Army Corps is in charge of Lieut Colonel Heidekoper of New York, a hard working, conscientious officer Major Kimball of Marion, Ind , and Major Woodbury of New York, have reported here and are awaiting with the writer the formation of the Sixth Army Corps At present my time is profitably occupied by consultations in the camp and by performing operations in the Leiter General Hospital and the St Vincent's Hospital, Chattanooga The evenings are occupied by giving lectures on first aid to the Hospital corps St. Vincent's Hospital has been used as a temporary hospital *for the troops until the Leiter Hospital* was in condition to receive patients The abandonment of regimental hospitals meets with the same opposition here as elsewhere, but the wisdom of such a course must be apparent to all who have had experience in the field Major E C Carter, U S A , is now in charge of the Leiter General Hospital He is one of the busiest men in the camp He is in every way admirably adapted for the position he now occupies He is straining every nerve to improve and equip the building for the accommodation *of from 300 to 500 patients* He has the hearty co operation of the Surgeon General and Colonel Hartsuff

Major General John R Brooke
General in Chief in charge of the Department of the Lakes

in pushing the work About thirty patients are at present in the hospital and in less than two weeks the number of patients will exceed one hundred Hospital furniture and supplies are arriving every day, and in the course of two weeks the hospital will be fully equipped The value of this hospital to our sick soldiers can not be overestimated Mrs Leiter will have the respect and sincere gratitude of every one of the inmates and of hundreds yet to come Chickamauga is a quiet little country hamlet where our patients can enjoy to the fullest extent what they are so much in need of, rest and quietude Six trained nurses have been sent by the Surgeon General and are now on duty With the increase in the humber of patients more will be sent. A corner room in the tower on the second story has been set aside as an operating room and is now under going the necessary repairs to adapt it for this purpose The first operation performed in this hospital was for empyema following pneumonia Two additional cases await a similar operation during the course of the week

Major General James H Wilson

CRAWFISH SPRINGS

One of the great attractions near the National Park and adjacent to the Leiter General Hospital is the famous Crawfish Springs At the end of a large basin and at the base of a rock a large volume of water, as clear as a crystal, is poured out with considerable force This spring yields 62,000,000 gallons of water in twenty four hours The temperature of the water is 56 degrees F , summer and winter alike The dam a little below the springs, utilized to furnish water power for the hotel, has been removed for the reason that it interfered with the supply of water, deviating it evidently through subterranean channels in another direction As soon as the property was transferred to Mrs Leiter for Government use I had the basin cleaned out of moss and dirt by a detail of soldiers furnished by the Fifth Illinois Infantry The sides of the hill around the basin were ditched a few feet above the level of the water for the purpose of draining the surface water to a safe distance below the springs The Hospital is supplied with water from this spring Besides, hundreds of barrels of water are brought daily into the camp by mule teams The water is wholesome, and palatable

The following is the result of a chemical analysis made by a competent chemist

ANALYSIS OF CRAWFISH SPRINGS WATER

Bicarbonate of lime	0 6753
Bicarbonate of magnesia	0 4544
Sodium chlorid	0 856
Potassium chlorid	0 048
Silica	0 0537
Free ammonia	0 0029
Albuminoid ammonia	0 0025
Oxygen absorbed	0 031

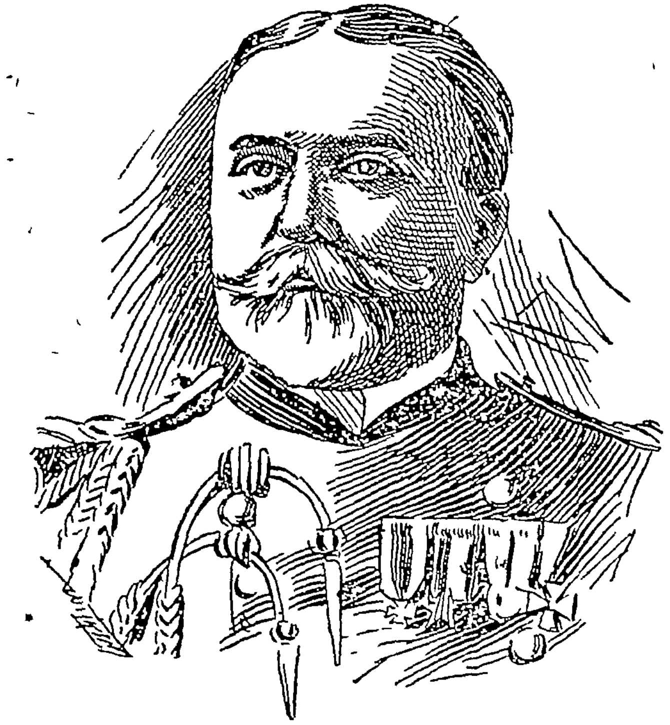
The presence of free ammonia and albuminoid of ammonia, although small in quantity, led us to suspicion the presence of organic matter which might possibly prove to be a source of danger For the purpose of testing the water still further as to its fitness for hospital and camp use, samples were sent at three different times to the professor of chemistry in the Chattanooga Medical College Dr H Berlin made a very careful chemic analysis and bacteriologic examination with the result that he pronounced the water free from dangerous organic matter and pathogenic microbes The only microbe which he was able to cultivate was the colon bacillus, and the presence of this microbe could be readily accounted for by the blocking of the sewer pipe, an evil which was promptly removed The springs would furnish an ample water supply for the whole army if the Government would only erect a pumping station near it, a project which is now under serious consideration With such an improvement Camp George H Thomas would be one of the most salubrious camping places in the United States for a large army The intake now is some distance below the springs where the flow of water is impeded by a dam two miles and a half below the springs Above the dam is a narrow beautiful lake two miles and a half in length, extending to near the springs, which is leased by the Chickamauga Fishing Club

CHATTANOOGA MEDICAL SOCIETY

This medical society meets twice every month, on the first and third Friday At the last meeting the subject selected by the committee was "The Modern Treatment of Gunshot Wounds in Military Practice " The writer was invited to open the discussion After a brief résumé of the character of wounds inflicted by the modern bullet, the treatment was considered in detail Special stress was placed upon the inutility of the ordinary and Nélaton's probe in locating and finding bullets lodged in the body Attention was called to the value of the X ray as a substitute for the probe in making a reliable diagnosis The use of the bullet probe on the battlefield was condemned and the advice given that bullet wounds should be hermetically sealed with the first aid package, which should contain an antiseptic powder composed of boracic acid and salicylic acid (4 1), and no exploration made until the patient reaches the field hospital, where all facilities for aseptic surgery and the necessary instruments for diagnosis and operation should be at hand A new bullet probe and bullet forceps devised by the writer were exhibited and their manner of use explained The balance of the paper treated of gunshot wounds of the extremities, cranium, chest and abdomen For want of time consideration of the last subject, "Gunshot Wounds of the Abdomen," was postponed until the next meeting Invitations to attend the meeting were sent to the military surgeons in camp, consequently the attendance was large and the discussion became general and proved of interest to all present Considering that Chattanooga has only 40,000 inhabitants and that the average attendance at these meetings on ordinary occasions is never less than from thirty five to forty, is the surest indications that our colleagues in this city take an active interest in the scientific work of the profession

AMUSEMENTS

The civilian soldier finds it difficult to satisfy his mind and body with what is required of him in camp life But a few weeks ago he was a professional man, a clerk, teacher, or left the school, workshop and plow, and now it is hard for him to imagine that he should not be kept busy from sunrise to sunset He is only too anxious to drill in sunshine or rain, and considers it a privilege to do guard duty, where his power and military significance can be made to appear at greatest advantage He finds it difficult to occupy his many leisure hours in a profitable manner To the credit of our soldiers it must be said that evidences of intemperance are rarely seen in camp Temperance canteens are common and are better patronized than those in which beer is sold I have not seen an intoxicated soldier since I arrived in camp The more common amusements of the soldiers during the heat of the day, between 10 A M and 3 P M, between drill hours, consists in reading, writing letters, playing cards, and the college boys are bound to play base or football The chaplains make themselves useful not only in caring for the spiritual welfare of their soldiers, but they also look after their intellectual interests They extemporize reading rooms and supply them with writing and reading material These reading tents are very popular, and when the men are off duty they are always crowded The many regimental bands furnish excellent music, which does so much in cheering up and amusing the soldiers Two theaters have sprung up in the camp, mushroom like Performances are given in the afternoon and evening The admission fee is twenty five cents, box seats fifty cents I have been told by those who have been in the habit of attending that the plays are good and that the patrons are made to feel that they have received their money's worth



Major General Joseph C Breckinridge

RED CROSS ASSOCIATION

The Medical Department during the present war is in a condition fairly well prepared to supply the sick and wounded with the necessary instruments, medicines and food There will be only a very limited field of usefulness for the Red Cross Association to fill in defects here and there as occasion and circumstances may require The work of the Red Cross Association is, however, recognized by the War Department, as becomes evident from a circular letter received a few days ago from the Surgeon General

SURGEON GENERAL'S OFFICE, WASHINGTON, June 9, 1898

Lieutenant-Colonel Nicholas Senn, Chief Surgeon, U S Volunteers, Sixth Army Corps Chickamauga Park, Ga

Sir —The Secretary of War has approved the following proposition made by the American National Red Cross Association, and the chief surgeons of Army corps and divisions will co operate with the authorized agents of this Association for the purposes indicated

"We can put any desired amount of hospital supplies—ice, malted milk, condensed milk, Mellin's food, etc, into any of the volunteer camps in a few hours Will you be kind enough to bring this letter to the attention of Secretary Alger and ask him if there is any objection to our appointing a Red Cross representative to report to the commanding officer and the chief surgeon in every camp, confer with them as to their immediate needs and, if anything of any kind is wanting, open there a Red Cross station and send in the supplies We can do this, not in a few weeks or a few days, but in a few hours, and can furnish any quantity of any desired luxury or delicacy for hospital use We hereby tender our aid and put our organization at the War Department's service for co operation in the field"

Very respectfully,

GEO M STERNBERG, Surgeon General U S A

It was prudent and wise that the Surgeon General and the Secretary of War granted this modest request Dr Gill of New York represents the Red Cross Association here He arrived a few days ago and intends to erect a frame building near the general headquarters as a storehouse for the supplies He possesses excellent executive abilities combined with modesty, which will ensure him a wide avenue of usefulness and the hearty appreciation of the medical officers In my next communication I will speak of the hospital corps, its organization and scope of work in actual warfare

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Belladonna Poisoning Simulating Puerperal Insanity

NEW YORK CITY, June 25, 1898

Mrs G, 26 years old, was delivered last January of an anacephelous male child Labor was short and natural Two days after, to prevent the secretion of milk with the consequent painful distention of the breasts, a belladonna plaster was applied to each gland in addition to the usual bandage compression The nipples were not covered by the plasters In about twelve hours I was hurriedly called to my patient and found her condition as follows Flushed face, pulse 100 and good, temperature 100 5 degrees and quite actively delirious She sang, whistled, laughed, cried and made futile attempts to get out of bed and house Finding no appreciable cause for the combined disturbance of body and mind, puerperal insanity suggested itself as the most probable diagnosis

The second visit was made sixteen hours after the first the woman's condition was found to be much worse, namely ' Her delirium was intensely maniacal in spite of the fact that she received large and frequent doses of chloral and bromid However, at this visit new features were added to the old clinical picture which at once removed the diagnosis of insanity and established one of belladonna poisoning The patient's lips, tongue, mouth and throat were dry, the pupils fully dilated and the secretion, as urine, was almost totally suppressed

The belladonna plasters were quickly removed and the breasts washed with soap and water The breasts were examined for a scratch or an abrasion which could serve as an avenue for absorption, but as none was found the drug evidently found its way into the system through the unbroken skin

All the symptoms disappeared within ten hours of the removal of the cause excepting the pupillary dilatation, which lasted thirty six hours

It may be interesting to add that the very same condition was produced in the same patient four days later by the application of one plaster only and the removal of which resulted in the removal of the trouble

The points of interest in this report appear to be these 1. The remarkable susceptibility of this woman to the influence of belladonna 2 The minimum amount of the drug which produced the symptoms of poisoning 3 The possibility of mistaking that condition for acute insanity when it occurred in the puerperium 4 The caution to be observed in prescribing belladonna plaster or ointment—an old warning, but one that can bear repetition R ABRAHAMS M D

An Explanation

PHILADELPHIA, June 16, 1898

To the Editor —We note the letter recently addressed to your JOURNAL (May 28, p 1301) by Dr J H Davisson of Los Angeles, Cal , ex president of the State Board of Health, relative to an irregular use of a recent report made by him, which was published in our antitoxin brochure about a year ago

It was far from our intention to cause Dr Davisson any annoyance, or to make any improper use of his name It was not our intention to have it appear that the Doctor personally endorsed our product, but that the State Board of Health of California discriminated in favor of American antitoxin, and since, at the time our brochure was published, we were supplying, and have continued to supply, the California State Board of Health with Mulford's Concentrated Antitoxin, the statement as published in our brochure is correct Our copy supplied the publisher, incorporated the above with a quotation from Dr Davisson's report. Unfortunately, our instructions regarding the use of the bracket were not carried out The article should have read according to our copy as follows

CALIFORNIA STATE BOARD OF HEALTH

The antitoxin used in California is made in this country and after considerable investigation and trial of the German and French products, we are giving our preference to the American production The American product is put up in better form for transportation and handling, which is of itself an important item [The antitoxin now used by the Board is that of H K Mulford Co of Philadelphia The concentrated "Extra Potent" (500 units to each c c.) is the best]

We extremely regret that the bracket was omitted in placing this matter in type Certainly we did not intend to have it appear that our product was personally endorsed by Dr Davisson, but the fact that the California Board of Health was being supplied with Mulford's Antitoxin at the time our brochure was published, makes the statement as apppears in our brochure, with the exception of the personal endorsement of Dr Davisson, absolutely correct

Thanking you in advance for the publication of this explanation, we are Very truly yours, H K MULFORD COMPANY

Marine Hospital Service

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON GENERAL
MARINE HOSPITAL SERVICE
WASHINGTON, D C, June 24, 1898

JOURNAL AMERICAN MEDICAL ASSOCIATION, 61 Market Street,
Chicago, Ill

Sirs —With the close of the present fiscal year, June 30, the subscription for eighteen copies of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, for the use of this Service, will expire, and will not be renewed for the ensuing fiscal year By direction of Supervising Surgeon General, M H S

Respectfully yours,
PRESTON H BAILHACHE, Surgeon M H S

ASSOCIATION NEWS

Further Delay in Publication of Official Proceedings

4 EAST 37, NEW YORK, June 21, 1898

To the Editor —Your telegram is at hand in regard to the resolutions and report of Executive Committee I was more than half sick at Denver and could not write up the proceedings of the Executive Committee, in my book of notes there was an immense mass, and so put the book and all in my trunk to do it here at home The trunk got separated from me and only reached me just now, and I have been overwhelmed with accumulated work that I have not yet tackled it, but will do so at once, and send on the resolutions, etc , very shortly

In haste, yours sincerely,
L DUNCAN BULKLEY, M D

SOCIETY NEWS

American Academy of Railway Surgeons —The next meeting of the American Academy of Railway Surgeons will be held in Chicago, Oct 5, 6 and 7, 1898 D C Bryant, Secretary, Omaha, Neb

Michigan State Board of Health —The quarter centennial celebration of the establishment of the Michigan State Board of Health, to be held in Detroit, will include addresses by leading sanitarians of this country It will commence August 9, at 9 A M , and continue throughout the day, there being three sessions, morning, afternoon and evening

The Third International Congress of Applied Chemistry, Vienna, July 28 to August 2 will discuss the international unification of the methods of analysis for tests of products whose commercial value is based on their chemic constitution, also for tests to control various chemic industries, also instruction in chemistry and numerous other subjects of general interest Secretary, F Ströhmer, Schonburg Strasse, No 6

Annual Meeting —The Annual Meeting of the White Mountains Medical Association Connecticut Valley Medical Association, and White River Medical Association will be held at Hanover, N H , July 29 and 30, 1898 The program includes "Early Operation for Gall Stones," by W H Conant of Boston, "Racial Aspects of Disease," by Prof C D Wells of Dartmouth College, "Fractures," by P S Conner, 'Diagnosis of Pelvic Disease," by Paul F Mundé, "Clinical Remarks on Treatment of the Eye," by David Webster, and a paper, subject unannounced, by Wm H Parish

Oregon State Medical Society —The twenty fifth annual meeting of the Oregon State Medical Society was held in the parlors of the Imperial Hotel at Portland, June 2 and 3 The meeting was quite well attended, and the papers presented, although small in number, were of exceptionally high order Several visitors were in attendance from outside of the State The officers elected for the coming year were President, C H Hall, Salem, secretary, William F Amos, Portland, treasurer, Mae H Cardwell, Portland The next meeting will be held at Portland in June, 1899 After the close of the meeting a party of delegates from Oregon and Washington State Medical Societies left for Denver to attend the AMERICAN MEDICAL ASSOCIATION

State and Provincial Boards of Health —The thirteenth annual meeting of the Conference of State and Provincial Boards of Health of North America will be held in Detroit, Mich , Aug 9, 10 and 11, 1898 The first day, August 9, will be given to meeting with the Michigan Quarter Centennial Celebration in effecting organization and hearing reports of committees, the second day to the subject "What are the Principal Lines of Work of Your Board? How is Each Accomplished? What Modification, if any, does the Experiece in Your State Suggest?" The third day will be given to discussion of the various phases relating to the restriction and prevention of tuberculosis. The phases proposed are 1 Etiology 2 Morbid Anatomy 3 Statistics 4 Identity of Tuberculosis in Man and Animals and its wide Distribution among the Latter, also its Communication to Man through Food 5 Economic Phases 6 How may Tuberculosis be Prevented?

PUBLIC HEALTH

Contagious Diseases —No colonists affected with contagious diseases are allowed to settle in western Australia, according to a recent official decree —*Sem Méd* , May 25

An epidemic of measles has precipitated by a few weeks the closing of a school in the Borough of the Bronx, New York City

The building has been fumigated, but it is not known when it may be reoccupied The parents of over a thousand children are somewhat clamorous over the anticipated loss of educational advantages and are said to connive at the suppression of reports The same old conflict between the individual and the State therefore still prevails

The Complications of measles are liable to be much more serious in hospitals as the patients are exposed to contagion from streptococci which seem to acquire increased virulence in passing from one person to another The contagiousness of measles during convalescence has been confirmed again by a number of soldiers recovering from scarlet fever, who were placed in a ward occupied by a few convalescents from measles, and all contracted measles, which suggests that disinfection is required also after this disease —*Progrès Méd.*, May 21

Fin de Siecle Milk —An establishment has recently been opened at Berlin to supply "diabetes milk," made according to v Noorden's formula 1 per cent sugar and 6 per cent fat Also Jaworski's "strength milk" for forced nutrition with passive exercise, 10 per cent fat. But the main object is the production of milk for infants, made to correspond to mother's milk by diluting and centrifugalizing cow's milk and adding milk sugar, according to the formula of Professor Gaertner of Vienna

Unification of the Statistics of American Cities —A motion introduced in Congress through the Reform Club of New York authorizes the Commissioner of Labor to compile and publish annually as a part of the bulletin of his department an abstract of the main features of the official statistics of the larger cities of the country The public are now dependent for their statistics upon local reports, which too often confuse and bewilder rather than make clear the criminal, vital and social facts they attempt to collate The object of the present movement is to give uniformity of scope to these statistics and bring them together in one intelligent tabulation, or series of tabulations, as the commissioner's means will afford, and we trust that the Reform Club will bear in mind that this class of skilled work requires "the sinews of war" not less than the other lines of work assigned to the commissioner

Yellow Fever —Dr Lacerda reiterates his assertions that it is possible and practicable to entirely eradicate yellow fever in a town by tearing down the old damp sunless houses that are known to be foci of infection, and disinfecting those that it is impossible to destroy, as also the holds of vessels The germs die in the sewers and in sunshine, the usual means of transmission being the air, and only in a circumscribed radius, although they can be carried in clothing, merchandise, etc He concludes by stating that persons who have become acclimated to yellow fever may lose their immunity by an eight months' residence in a temperate climate —*Gaz Méd de Bahia*, February

Two new cases of yellow fever were reported at McHenry, Miss , June 20, a total of seventeen cases since May 20

Insanitary Wall Papers —The fact is of no small importance to be kept in mind that, though the unwholesome exhalations of papered walls mostly emanate from such papers as have a blue or a green ground, they also occur where the blue or green constitutes the largest part of the pattern, the dye stuff being chiefly composed of blue or green ultramarine The latter is entirely harmless, but has the property of becoming decomposed by slightly sour liquids and diffusing a most disagreeable odor, a development of sulphuretted hydrogen during the slow process of decomposition The paste used for fixing wall paper is frequently of a somewhat sour or readily souring character and quickly penetrates the paper, causing the above mentioned effect, a very slight degree of fermentation sufficing to bring about the offensive result, and this appears, too, the more markedly if the walls are slightly damp and already covered with several layers of paper so that the lime plastering can not have a neutralizing tendency on the lactic acid in the paste, etc. In such cases, therefore, where it is necessary to affix wall paper on a ground of old paper, as well as in all cases where green or blue is used, it is recommended to employ only such gluing agents as do not sour, or if inclined to decomposition, contain slight quantities of lime, milk or soda solution before use

Typhoid Fever from Ordinary Streams —The secretary of the State Board of Health of Michigan has issued the following warning to young men and all who bathe in streams Recent reports to the State Board of Health show that at least two cases of typhoid fever have been caused by drinking the water in or from the Kalamazoo River In no case should water be used for drinking or culinary purposes from a river or stream into which sewage is emptied or privies are liable to drain, and as most of the rivers and streams of this State have towns situated upon or near their banks, from which sewage is received, and privies are liable to drain, therefore it is very dangerous to use the water from any of the rivers or streams for any culinary purpose whatever, except the water be first boiled, and it should not, in any case whatever, be drank, unless previously boiled Cases have been reported where typhoid fever has been contracted by bathing in streams Probably this will be most likely to occur through accidentally or carelessly taking the infected water into the mouth Especially should no person bathe in any ordinary stream just below any city, village or other source of sewage or privy drainage

NECROLOGY

RICHARD CHANNING MOORE PAGE, M D , died June 19, in Philadelphia, after about a week's illness He was born at Keswick, Albemarle Co Va , Jan 2, 1841, the youngest child of Dr Mann Page and Jane Frances Walker After remaining in the University of Virginia until the close of the session in 1861, he entered the Confederate Army as an artilleryman and served under Gen Joseph E Johnston and on the staff of Gen John C Breckinridge, where he remained until the end of the war He was an active participant in the battles of Fredericksburg, Chancellorsville, Mine Run and Gettysburg, in the last of which he was severely wounded Subsequent to the war he returned to the University of Virginia to study medicine but removing to New York City in 1867, he received his medical degree from the New York University in 1868 and at once began his career in the eastern metropolis He was indefatigable as a teacher and likewise wrote acceptably, "A Practice of Medicine," "Physical Diagnosis" "Sketch of Page's Battery," and the "Genealogy of the Page Family" being among his more important contributions As a member of a large number of medical and historical societies he became widely known and appreciated

JOHN S MCGUIRE, M D Seattle, Wash , aged 65 years Dr McGuire had the honor of being one of the famous six hundred whose deeds are told in the "charge of the light brigade" He also received medallions and marks of honor for brilliant services at Inkerman in the Crimean War In 1871 he resigned his commission in the British Army and after a short residence in Australia went to San Francisco, where he practiced for a short time He came to Seattle in 1889, where he resided until the time of his death

SAMUEL GRAHAM, M D Butler, Pa , died June 21, aged 62 years He was a member of the class of 1862, Jefferson Medical College, and for thirty three years one of the leading practitioners of Butler County, Pa

EBEN JACKSON, M.D , Castleton Medical College, Vt , 1856, of Somerville, Mass , died June 22, aged 73 years He served under Grant, and was in charge of hospitals at Memphis, Vicksburg and elsewhere, at different times From having participated in several battles he was known as a "fighting doctor," but at the close of the war he entered upon civil practice, in which he remained until his death

J B Johnson, M D, Allegheny, Pa, June 20, aged 61 years ——Calvin D McDonald, M D, Kansas City, Mo, June 19, aged 63 years ——W F Miller, M D, Louisville, Ky, June 17, aged 74 years ——W F Swisher M D, Woodburn, Iowa, June 23 ——T N Cunningham, M D, Princeton, Ill, June 22, aged 54 years ——E J DeRaismes, M D, New York University, 1882, died at his home, Hudson Boulevard, Union, N J, June 18, aged 39 years ——J A McCoy, Tacoma, Wash aged 71 years ——W W Beach, M D, Tekoa, Wash, aged 50 years

BOOK NOTICES

Twentieth Century Practice An International Encyclopedia of Modern Medical Science, by Leading Authorities of Europe and America Edited by Thomas L Stedman, M D, New York City In Twenty Volumes Volume XIV, "Infectious Diseases" New York William Wood & Company 1898

This volume is devoted, as its name implies, entirely to infectious diseases, viz Scarlet fever, measles, German measles, chickenpox, glandular fever, whooping cough, cholera infantum, cholera nostras, Asiatic cholera, dengue, beri beri, miliary fever and Malta fever

The contributors to this volume are Dillon Brown, M D, David Bruce, M.B, C M; Sir Joseph Fayrer, Bart., M D, LL D, F R.S, F R C P, R.C S, Frederick Forchheimer, M.D, A Jacobi, M D, A Metter, M D, Nathaniel Read Norton, M D, Joseph O'Dwyer, M D, Theodor Rumpf, M D A A De Azevedo Sodre, M D, Dawson Williams, M D, F R C P

The high character of the contributors prepares us for the excellent quality of the work and one is not disappointed at the result.

This volume is a fitting companion of its predecessors in this magnificent series and one to which the reader may turn for complete information on this important class of diseases

Aphasia and other Speech Defects By H Charlton Bastian M A, M D New York D Appleton & Company, 1898

In this work the author has reproduced with additions the Lumleian Lectures delivered before the Royal College of Physicians of London, 1897, and published in the *Lancet* These lectures form parts of chapters 1 and 2, and nearly the whole of chapters 6, 8 and 9 Chapter 7 was the Clinical Lecture delivered at the University College Hospital, which appeared in the *Lancet* for September, 1897 With these exceptions the remaining matter is entirely new

This author, who is well known in other biological fields, in this volume is seen at his best Nothing unnecessary, nothing redundant, the sentences go straight to the mark with the practiced skill of the literary expert The student wishing to acquire knowledge of this interesting disease, and the practitioner wishing to refresh his memory and gain additional knowledge, will be charmed with this work by Bastian, and as of its accuracy there is no question, we have no doubt about its reaching permanent popularity

Modern Gynecology A Treatise on Diseases of Women, comprising the results of the latest investigations and treatment in this branch of medical science By Charles H Bushong, M D Illustrated, second edition and enlarged, pp 404 New York E B Treat & Company 1898

A man who inflicts on the profession a work on gynecology at a time when our shelves are loaded with them should either have something very new and striking, or else apologize for writing the work The older authors usually commenced their work with an apology for having written. Careful examination of this work does not show any very particular reason for its publication, although its statements are clear, the illustrations are good and the compilation of existing knowledge fair

The old dosage, however, is used in the prescription writing

Diseases of the Stomach A text book for practitioners and students By Max Einhorn, M D, Instructor in Clinical Medicine at the New York Post-Graduate Medical School and Hospital, Visiting Physician to the German Dispensary Second Revised Edition 502 pages Price, cloth, $3 25 *net*, flexible leather, $3 75 *net* New York William Wood and Company, 1898

Members of the Association will remember with pleasure demonstrations of gastro-diaphany made in the Association meeting by the author of this work, and it may be said that since that time medical literature has been enriched by a large number of treatises on the subject The first edition was a thorough expose of the existing state of knowledge on the subject

This edition is not materially altered from its predecessor, which was published late in 1896, and in our notice of that edition we took occasion to commend the work, a commendation in every way merited

Manuali Hoepli Spiritismo Di Armando Pappalardo Milano Ulrico Hoepli 1898

Magnetismo e Ipnotismo Per il Dott G Belfiore. Milano Ulrico Hoepli 1898

These are two of the more recent of the little pocket manuals issued by the Italian house of Ulrico Hoepli The first of these discusses the phenomena of spiritualism in rather a more respectful manner than an American medical author would, the second is a discussion of the phenomena of hypnotism according to the latest European literature of the subject Both are compilations, but such have a very useful function and will probably be serviceable to those who can read them While spiritualism has interest only as a psychic aberration, and some of the literature of hypnotism also has in it a larger element of human credulity than is consistent with genuine science, such manuals as these are not without interest, and that on hypnotism appears to be on the whole a fair statement of verified facts

A Manual of Instruction in the Principles of Prompt Aid to Injured, including a Chapter on Hygiene and the Drill Regulations for the Hospital Corps for the U S A Designed for Military and Civil use, by Alvah Doty, M.D Second Edition, New York D Appleton Company, pp 302, 1898

The second edition of this Manual presents a thorough revision and some enlargement

A chapter on Hygiene has been introduced, and a chapter on the recently adopted Drill Regulations for the Ambulance Corps of the U S A has been added National guardsmen, railroad employes and those exposed to accident will find the book of great value

Transactions of the American Association of Obstetricians and Gynecologists Vol 10, pp 483, Philadelphia Wm J Doran, 1898

This volume includes the minutes of the meeting and the papers read at the meeting at Niagara Falls, New York, August 17, 18, 19 and 20, 1897 The exhibition of specimens presented with their illustrations occupies an important place in the work. Obituary articles on the late Traill Green, Fletcher D Mooney and James Greig Smith of England, are included in the volume, which is only just to say surpasses its predecessors The illustrations are finer than those usually found in volumes of transactions

Atlas and Essentials of Pathological Anatomy By Dr O Bollinger. Volume II Urinary Apparatus, Sexual Organs, Nervous System and Bones With 63 colored figures upon 52 plates and 17 illustrations in the text Pp 252 New York William Wood & Co 1898

This excellent series of atlases has a valuable addition in this volume by Bollinger The plates are prepared from the actual specimens and the coloring is strikingly natural For reference this atlas is invaluable

MISCELLANY

The Monument to Pasteur in front of the Pantheon in Paris is now almost completed The sculptor, M Falguière, has added a group of a mother with her child thanking Pasteur, whom Fame is in the act of crowning with laurels The international subscription to the memorial, according to the *British Medical Journal*, now approaches £13,000

Anal Imperforation in a newborn infant that required an iliac anus was followed by intestinal prolapsus Kirmisson then introduced a sound through the artificial anus into the lower intestine, working it through to the perineum, and successfully re-established a normal anus The infant, four days old, was presented at a recent meeting of the Paris Acad de Méd

Etiology of Pertussis —The results of recent research by R Behla confirm the announcement of Deichler and Kurloff that the micro-organism of this affection is not a bacterium but an ameba belonging to the protozoas, propagating by division and spore formation It is not found in the blood nor epithelium and does not grow inside the cells —*Deutsche Med Woch*, May 12

The Presence of an Antitoxin in the bile of animals dying from the cattle plague has been established by Koch, and now by E I Frantzius in regard to animals dying from rabies The introduction of equal parts of bile and cerebral substance derived from the same rabid animal, rabbit, introduced under the dura mater of another rabbit, was not followed by any morbid manifestations, but if the bile had been taken from a non rabid animal, the rabbit promptly succumbed to rabies —*Wratsch*, April 18

Reform at Bellevue Hospital —The Commissioner of Charities of New York has decided to reorganize the staff of the chief hospital He hopes to so select the staff that educational interests will be conserved, but he purposes to break up the "practical monopoly," as it has been called, of the great schools Inasmuch as there will be candidates forthcoming number sufficient to fill ten such staffs, it can well be understood that his self assumed lot will not be a happy one for some time to come

Iodin in the Blood —Gley asserts that the iodin discovered by aumann in the thyroid gland is in reality derived from the blood His research has resulted in establishing the presence of iodin in the blood, stored in the red corpuscles, but only in adult animals —*Semaine Méd*, May 25

The Latin American Scientific Congress opened auspiciously in Buenos Ayres in April with 110 members inscribed and crowded attendance A number of interesting and valuable communications were presented on hygienic and medical subjects by delegates from the various Latin American countries We note among them that cancer seems to be increasing in South America as rapidly as elsewhere In Buenos Ayres it has risen from 91 in a thousand deaths to 115, in the last twenty six years The next Congress will convene at Montevideo in 1901

Intestinal Stenosis Consecutive to Gangrene Cured by Entero anastomosis Without Resection —J Schulz reports a case in which eight days after the dark blue loop of intestine had been reduced during herniotomy, symptoms of severe stenosis appeared, fecal vomiting, pain, etc. It was found that the stenosis, ten centimeters in length, involved the whole of the intestine that had been incarcerated On account of the threatening general condition he abstained from resecting and merely performed an entero anastomosis, which proved perfectly successful Only two similar cases are on record —Garré and Maas, *Münch Med Woch*, May 17

Bone Clamp and Fracture —Parkhill (*Annals of Surgery* for May) presents a method for the fixation of the fragments in recent fractures where there is a tendency to displacement, and ununited fractures after resection, and in fractures with malunion after resection, with reports of a number of cases He claims for his instrument that union has been secured in every case in which it has been used, that it is easily and accurately adjusted, that it prevents both longitudinal and lateral motion between the fragments, and that the presence of the shafts in the bone stimulates the production of osseous tissue, that nothing is left in the tissue to reduce their vitality or cause pain and infection, and no secondary operation is necessitated

Mr David H King Jr of New York, has offered to the Red Cross relief committee his house at Jekyl Island, S C, for use as a hospital Judging from the newspaper illustrations, the surroundings are unexceptional and the residence itself already built on the pavilion plan Jekyl Island is within an hour's travel of Fernandina, Fla, and its healthfulness and location make it an ideal site for an army hospital Soldiers becoming ill at the camp which, it is reported, will be established at Fernandina, can be easily taken to this island It is also conveniently situated for the care of soldiers wounded on Cuban battlefields Not only will Mr King give the use of the house for hospital purposes, but he will maintain it as well

The New York Post Graduate Hospital —In the case of Dr Charles B Kelsey, who was removed from a professorship in the New York Post Graduate Hospital by a majority vote of the Board of Directors of that institution, the appellate division of the supreme court has reversed the decision of the special term directing his reinstatement The higher court holds that the Board has power to remove a member of the faculty by a simple majority vote, in cases where no charge of misconduct was made, but that a vote of three fourths was necessary to effect a removal upon charges In the first instance the power is declared to be absolute, and in the second it is judicial "It seems reasonable," says Mr Justice Marrett, "that a majority vote should have been deemed sufficient for a removal at pleasure, while a three fourths vote should have been required for a removal upon charges When a professor is removed at pleasure, no stigma attaches to the act of removal His services are no longer required and he is told so That is what, in substance, such a removal amounts to"

Stagnation of Stomach Contents —Benedict (*Medicine*, May) in discussion of this subject includes the following diseases Atony, slight dilatation (the usual condition in cases called gastroptosis), true dilatation due to essential weakness and stenotic dilatation, from cancer, ulcer, fibroma, or external pressure involving the pylorus Hour-glass contraction may fall either under the second or third Stenotic dilatation is most frequently found with pyloric cancer and next with cicatrizing ulcer at the pylorus, or it may be first ulcerative and then malignant. Malignant diseases may sometimes have no obstructive bearing on the dilatation

Glossitis in Typhoid Fever —In the *Johns Hopkins Hospital Bulletin* for May, McCrea reports a case of glossitis complicating typhoid fever, which occurred in the Johns Hopkins Hospital, the first such case in over seven hundred cases of typhoid fever there He considers it of especial interest in that it occurred during convalescence from the original attack and ushered in a relapse, being apparently the first symptoms of the relapse after twenty four days of normal temperature The relapse itself was mild except for the severe onset, and no further trouble in swallowing affected the patient after subsidence of the swelling Diminution of the swelling in the left half of the tongue followed after the removal of the blood for cultures, and he considers this a support of the value of free incisions into the tongue in severe cases

Motor Neuron —In *Medicine* for May, Patrick of Chicago writes on "Motor Neurons in Practical Diseases" He finds that, "A lesion of any part of the lower motor neurons causes paralysis, flaccidity, atrophy, loss of the deep reflexes, and reaction of degeneration A lesion of any part of the upper motor neurons causes paralysis, spasticity, no atrophy, exaggeration of the deep reflexes and no change in the electric reactions "

Professor Senn to go to the Front —It is announced in army medical circles that the regular troops of the Fifth Army Corps will shortly have the benefit of the professional services of Col Nicholas Senn Since his appointment and muster Colonel Senn has been at Chickamauga, organizing the medical department of one of the army corps there stationed, but it is considered that his services could be employed to much greater advantage in the field hospitals near Santiago, Cuba It is probable that he will be assigned to special duty with General Shafter's command The chief surgeon of the corps is Lieut Col Benjamin F Pope, United States Volunteers

Movements of Medical Officers —Captain John L Phillips, Assistant Surgeon U S Army, just returned from the Pacific Coast, has been assigned to the 2d Army Corps at Camp Alger, Virginia Acting Assistant Surgeon, Medwin Leale, has been placed on duty with the cavalry squadron at headquarters of the Corps, and Assistant Surgeon Whitmore Steele, 8th N Y, has resigned on account of physical disability Three medical officers have been sent to the 3d Corps at Chickamauga, Ga, Captain Chas B Ewing, U S A, from Tampa, Fla, Captain Adrian S Polhemus from Fort Wingate, New Mexico, and Captain John S Kulp from his late station on the Pacific Coast Two officers have been ordered to report to General Fitzhugh Lee commanding the 7th Army Corps at Jacksonville, Fla, Captains Paul Clendenin and Henry S T Harris Changes at the hospitals are Captain H A Shaw, U S A, from the general hospital at Key West to Key West barracks, Fla, Captain R S Woodson, U S A, from the ambulance train at Tampa, Fla, to the hospital at Fort McPherson, Ga, and Acting Assistant Surgeon, John R. Devereux of Washington, D C, to the Leiter Hospital at Chickamauga, Ga

Medical Appointments Confirmed —Dr L L Seaman of New York to be Surgeon of the 1st Regiment of Engineers Dr Seaton Norman of the U S Marine Hospital Service to be Surgeon of the 3d Regiment of Volunteer Infantry Drs John W Cox and Zachary D Massey of Tennesse to be Assistant Surgeons of the 6th Regiment of Volunteer Infantry Drs M. Landry of Louisiana and R T Burr of California to be Assistant Surgeons of the 7th Regiment of Volunteer Infantry Dr James H Hepburn of the District of Columbia to be Surgeon of the 8th Regiment of Volunteer Infantry Dr A Pallones of New Jersey to be Surgeon of the 9th Regiment of Volunteer Infantry Dr Wm M Fuqua of Kentucky to be Surgeon of the 10th Regiment of Volunteer Infantry

An Army Hospital on Wheels —Major Charles Richard, Surgeon U S Army, has been in Washington, D C, recently superintending the outfitting of the R R Hospital train to the command of which he has been assigned The train left for Tampa, Fla, June 17, by way of the Southern Railway to Columbia, South Carolina, and over the Florida Central and Peninsular to its present field of duty It consists of ten Pullman sleeping coaches, a dining car, a cooking car and a combination coach, and is well equipped with such medical and surgical supplies and apparatus as would be likely to be of use while on the road with sick and wounded Major Richard is assisted by Captain H R. Stiles, Assistant Surgeon U S Army, with two hospital stewards, three cooks and twenty two nurses of the hospital corps of the army From time to time as may be required a section or the whole of the train will return with sick and wounded, who will be conveyed to one or other of the army general hospitals, and when not en route the train will be used as a receiving general hospital at the port of connection with Cuba Ambulant hospitals of this kind were in use during the last eighteen months of the Civil War In 1864, when General Sherman was at Atlanta, Ga, three trains ran regularly between that place and Louisville, Ky, a distance of 472 miles

Surgeon General Sternberg on the Danger from Yellow Fever — In a letter to the *Army and Navy Journal*, Surgeon General Sternberg expresses his views of what would happen if we should send an army to occupy any of the infected Cuban ports during the unhealthy months He says

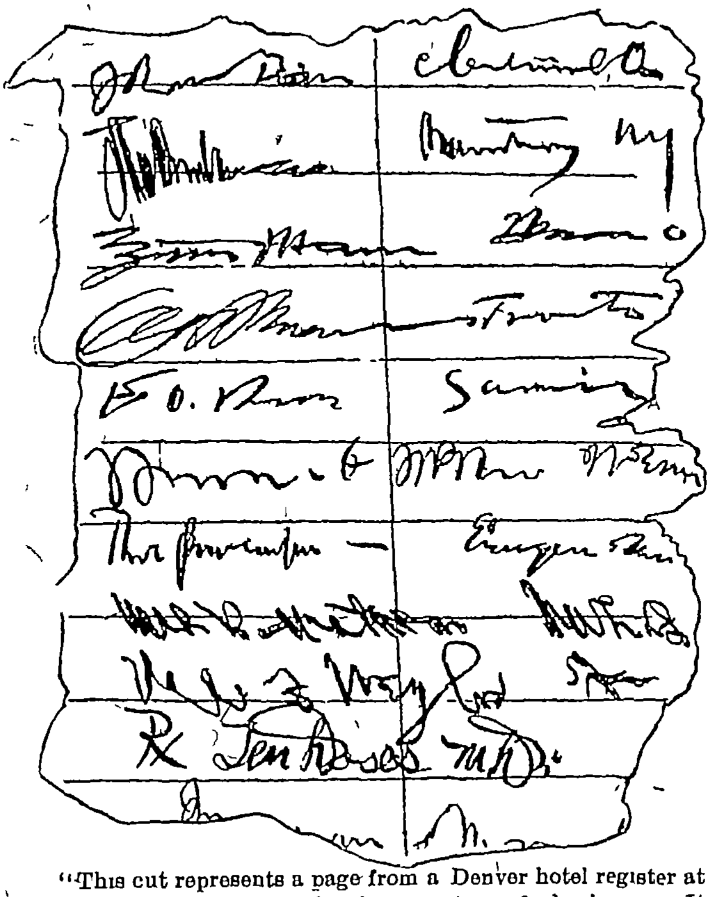
> In your issue of April 23, page 642, the statement is made that Gen Sternberg "expresses confidence in the excellent sanitary provisions of the military service and does not fear that yellow fever will prove more harmful to the troops than diseases which are common in the northern latitudes," etc I have not expressed any such optimistic opinion, and regret to say that it is not justified either by my studies relating to yellow fever or by my personal experience History teaches that when a considerable number of unprotected persons are exposed in a yellow fever infected locality during the months when this disease is most prevalent (May 1 to November 1, in the latitude of Havana), an epidemic almost infallibly results In the last week in April of last year, there were seventeen deaths and seventy new cases of yellow fever in the city of Havana Now, suppose that we had a similar number of cases at the same season in New Orleans and that 20,000 strangers from the North should go there to spend the summer, what would be the result? All past experience supports the belief that a majority of them would have yellow fever, and that from 20 to 40 per cent of those taken sick would die This is what I anticipate would happen if we should send an army to occupy Havana, or any other infected seaport on the coast of Cuba during the summer months If, however, these troops could be camped upon high land in the interior, and circumstances were such as to enable them to comply with all of the exactions of modern sanitary science, I am of the opinion that our loss from yellow fever would not be serious But in time of war military commanders are expected to take their troops to the points occupied by the enemy, and a picnic in the interior with frequent changes of camp, etc, is perhaps not exactly what we may expect I am not an alarmist, but I believe in looking facts fairly in the face, and can not allow your statement of my opinion to have currency at such an important moment in our country's history without a protest

Transient Agrypnic Delirium is the term proposed by Agostini for the psychosis observed after prolonged insomnia He cites a couple of serious cases, both recovering after a couple of days sleep, and describes experiments with two healthy dogs kept awake for two and three weeks The central nervous system showed the same histologic alterations as after intoxication with arsenic, lead, alcohol, etc., and he assumes that in the same way psychoses such as mania, lypemania and mental confusion, hitherto considered essential morbid forms, *sine materia*, are frequently of autotoxic origin, the result of lesions of the nerve cells produced by the action of the autochthonous poisons of the organism —*Semaine Méd*, May 14

X Rays in Medicine —Williams (*Medical News*, May 14) says that in making the diagnosis, "Physicians will find that although much that the X ray reveals can be recognized by other means it would often be an advantage to have this information confirmed by another method, and we must also appreciate that it can extend our knowledge into a field which was previously beyond our reach " By the X ray alone, in certain cases, aneurysm, emphysema and pneumothorax, diagnosis may be made, but as a rule it is only one method and should be used only in connection with others In suitable cases the X ray gives earlier evidence of disease than the older methods He finds it indispensable in making a complete examination in diseases of the chest where they completely change the diagnosis previously made

Widal Test —Blackburn (*Medical News*, May 7) makes a report concerning this test in typhoid fever from data obtained during his service in the Presbyterian Hospital in Philadelphia, May to October, inclusive, 1897 In all suspected cases of typhoid fever, the blood was subjected to this test, and a specimen was taken immediately on admission of the patient to the hospital, the object being to find the first day of the disease on which the test was positive In eighty cases of enteric fever, as established by the clinical course, the test was positive except in two In one case of catarrhal fever the test was, on the seventh and ninth days negative, eleventh and thirteenth days doubtful, and positive on the fourteenth day In one case of uremia positive reactions were secured twice This patient had had typhoid fever five years before In one case of catarrhal, having had typhoid three years before, there was a positive reaction He concludes that it is a good corroborative test, in doubtful cases early in the disease it does not assist in diagnosis, and that in severe cases test is positive early, yet in a few typic cases it appeared to be negative

Why Prescriptions Go Wrong—Here is a squib from one of the New York City evening papers, one of the saffron colored variety of which you have heard



"This cut represents a page from a Denver hotel register at the time of a recent national convention of physicians It shows why drug clerks make mistakes in prescriptions"

A Research on Precocious Gestation——Dr Sage of Bordeaux recently delivered by means of forceps, a girl aged 13 years and six months, of a male child at term weighing eight and a half pounds The mother seems to have become pregnant a month after her first menstrual period There was nothing abnormal regarding the puerperium This has led Dr Sage to look up the subject of early pregnancies, which are less common in France than in other European countries He has been unable to find any mention of a case occurring at so early an age as his own in recent medical literature, the earliest being at the age of 14 years and one month In a medical dictionary published in 1823 mention is made of girls having been received into the Paris lying in hospitals at 13 years of age, and during the Revolution at 11 years, and even before that age The earliest cases recorded in other countries are Molitor's case in Luxemburg, where a child aged eight years and three months, became pregnant and was delivered of a mole containing a dead fetus seven months afterwards (this was in 1877), Outrepont's case (1825) of a German girl, aged 9, who aborted in her fourth month, Haller's case in Switzerland of a girl born in 1751 and delivered in 1759, and Dodds case in England (1881), where a Yorkshire girl, aged nine years and eight months, was delivered of a living child at term Here the young mother had menstruated from twelve months of age —*Lancet*, April 23

Cost of the Hospital Ships—The Government has paid more than $1,000,000 for the two hospital ships, the *Solace* and the *Relief*, $450,000 being to the Maine Steamship Co for the *John Englis*, renamed the *Relief* The price paid to the Cromwell Line for the *Creole*, now the *Solace*, was $600,000, making a total of $1,050,000 for the two hospital vessels The estimated cost to the War Department for fitting up the *Relief* is $50,000 in addition to many things which are to be presented by various organizations which are working to aid in reducing the horrors of war as much as possible An army officer said that about twice as much had been expended in fitting up the *Solace*, as the Navy Department had a special appropriation for the purpose and also greater facilities for doing work upon ships, as it controlled the navy yards The total expense of procuring and equipping the two vessels will not be far from $1,250,000 This amount would be increased 50 per cent if a third vessel should be purchased and equipped, as would be necessary if an expedition was sent to Porto Rico "It would bankrupt the Department," said an army surgeon yesterday, to get another hospital ship, but one will be needed for any additional expedition The English Government sends a hospital ship with every military expedition We have never had to send one beyond the confines of our own country, but in the Civil War transports were used to convey the wounded to points from which they could be readily transferred to hospitals on land There has been a noble response to the request for gifts to fit up the hospital ship with all that can be put aboard to aid the work of the surgeons and nurses We hope to have the vessel fully equipped and ready for us in five weeks from the time she was turned over to the Government, but it will depend on the speed of the contractors The most important things are being done first, so that if a sudden emergency arises the vessel can answer a call for its services The staff of physicians has been engaged, there have been six female and ten male trained nurses secured, while from the hospital corps of the army men have been secured who will do the heavy work of lifting patients and attending to the wards, while they will be trained in nursing, so as to relieve the regular staff and assist when the vessel has many patients We may get orders any day to start as soon as possible, and everything is being made ready"—*N Y Tribune*, June 20

The War Revenue Law— The new law requires that every medicinal preparation shall be subject to the stamp tax, excepting 1 Physicians' prescription medicines 2 Extemporaneous preparations put up "for any person" by a retail druggist. 3 Uncompounded drugs or chemicals 4 Non proprietary preparations which are not put up "in style or manner similar to that of proprietary medicine in general," which is presumably intended to mean galenic preparations which bear on their labels only their official names and nothing concerning their properties, uses or any claims to superior virtue The preparations specifically included, according to the evident meaning of the act, comprise 1 All medicinal articles having a trade marked name, or in which proprietary rights are claimed 2 All medicines compounded according to a secret formula. 3 All medicines advertised on their labels or otherwise as remedies or specifics for any ailment, which includes all ready made preparations of the retail druggist, all the "non secrets" and all "patent" medicines 4 All preparations of whatsoever nature which are put up in style or manner similar to that of a proprietary medicine In brief, the act subjects to tax ready made preparations of whatsoever description, excepting those only in which no proprietary right is claimed and which bear on their labels simply their recognized descriptive names The act is in some particulars very loosely phrased, and will give rise to much misunderstanding and litigation What, for instance, is the "style or manner of a proprietary medicine" package? Are phenacetin, antipyrin and *the myriad other German chemicals subject to tax?* It is true they are vended "under letters patent and trade mark," but the special proviso in Section 20 declares that "no stamp tax shall be imposed upon any uncompounded medicinal drug or chemical " These German chemicals are "uncompounded" and, it would seem, therefore are made the subjects of specific exemption Should the internal revenue office so rule and these products of all others escape taxation, the tide of protest would indeed be loud and deep The law took effect July 1 By special provision, goods in retailers' stock on that date will not be subject to tax, but will require stamps only as they are actually sold No reason can be given for taxing non secret medicines which does not equally apply to non secret foods and other merchandise No reason can be given for taxing non proprietary medicines that does not as forcibly apply to other non proprietary products Why then this discrimination against druggists' merchandise and the drug store? Many reputable manufacturers are carefully canvassing the situation with a view to bearing their fair share of these war taxes *The profit margin in numerous products is* too small to justify the retention of present prices The intelligent pharmacist will know how and when to discriminate between a justifiable and reasonable advance and an arbitrary and extortionate demand for further tribute In the former class are few products adapted for manufacture in the retailer s laboratory , it is in the latter class where the injustice will quite invariably be found and where the remedy is at hand - *Western Druggist*

Wax in the Tubercle Bacillus — Aronson has been experimenting with large quantities of bacilli grown on glycerin bouillon and also on Proskauer's mineral medium He found that treating 300 grams of the bacilli with ether and alcohol resulted in securing a brown tenacious substance, representing about one fourth of the original mass, assumed by Klebs and others to be fat Closer chemic analysis, however, has proven that this substance only contains 17 per cent of free fatty acids while the rest is true wax, which stains with carbol fuchsin The wax is also found in diphtheria bacilli, but not more than 3 to 5 per cent. of the total bulk, and it it not affected by the *fuchsin in* the same way After the wax is extracted from the tubercle bacilli, if they are treated with 1 to 50 sodium, and compressed at a temperature of 130 degrees C according to Behring's method, a very powerful toxin results It can also be obtained without the heating, but in smaller amounts —*Berlin med Gesellsch* , Session of May 11

Colleges

Hamline University, Minnesota, graduated a class of twelve from the medical department June 9 ——The graduating class of Harvey Medical College, Chicago, at the annual commencement held June 15 numbered eighteen ——At the annual commencement of the University College of Medicine, Virginia, there were *forty nine graduates in medicine* ——Beginning with the next school year the Medical College of Niagara University will be consolidated with that of the University of Buffalo, N Y

Hospitals

The Jamaica Emergency Hospital Association, New York City, dedicated the new hospital building on June 18 ——The Lackawanna (Pa) Hospital has received $950 from the estate of William T Smith ——The new wing of the Cook County Hospital, Chicago, a three story brick structure was opened for use June 20

Philadelphia

Philadelphia Hospital Overcrowded —From time to time it has been suggested that it would be best to separate the almshouse from the hospital department of this institution, but up to the present time nothing has been done and the patients keep the managers busy providing the necessary room The Mayor of the city has suggested consolidation of all the poor districts in the county of Philadelphia and placing them under the care of the Department of Charities and Correction Further, that while the almshouse is at present overcrowded some of the district poorhouses in the suburban sections of the city have comparatively few inmates and therefore could be used to advantage in caring for some of the patients now at Blockley It seems that the insane department is most pressed for room and that while 1050 cases are being cared for, the facilities are entirely insufficient Since all of the State institutions are taxed to their utmost with these unfortunates, they can not be removed from this city and the question regarding their final disposition is still an open one

Ptomain Poisoning —In previous issue of the Journal, notice has been taken of several cases occurring in Philadelphia During the week just passed two households consisting of nine persons have also been poisoned in this manner The first cases resulted from eating pork, the second from oysters, and it is now recorded that ham is responsible for the illness of these latter cases In the early part of the week these all partook of boneless ham which seemed fresh, but within a few hours all became ill and suffered with intense pains in the abdominal region and accompanied by nausea and vomiting A physician called in pronounced it ptomain poisoning A day or two later another family bought ham from the same grocer and after the two elder sons had eaten of it for lunch they were shortly afterward likewise afflicted The following morning two daughters and a younger son ate of the ham and were shortly afterward seized with similar symptoms The attending physician pronounced the cases ptomain poisoning All the cases terminated favorably

Bad Water —After weary months of incessant toil, after constant vigilance by the physicians of Philadelphia and after the worst epidemic of typhoid fever possibly ever known here the City council has been forced to pass the "Loan Bill" which was voted by the people a year or two ago Much praise should be given to those who entered personally into the fight and brought to light the underhand dickerings of the councilmen Dr William Pepper and Dr John K Mitchell were among the most earnest workers along this line Of the $11,200,000 which will now be expended in greater Philadelphia, several million dollars will be spent in erecting and maintaining a proper filtration system It is also gratifying to know that a large portion of this amount will be spent in the equipment of a large museum and also that the condition of the health of the people will be further improved by the construction of better streets and sewage systems

For Free Cuba —In the death of Dr John Blair Gibbs, who fell at his post of duty in Guantanamo, the University of Pennsylvania loses a worthy son and the United States Army a valuable assistant. Dr Gibbs was graduated at the head of his class in this institution in 1881, and for several years made this city his home Some time afterward he moved to New York and entered the Bellevue Hospital, serving on the resident staff Subsequently he matriculated at the College of Physicians and Surgeons, N Y , and was graduated in 1882 When the first call to arms was sounded he responded and is the first army surgeon to sacrifice his life for free Cuba.

Weather in Philadelphia —There were three deaths and four prostrations as the result of the intense heat for the week ending July 18 In several cases the patient had suffered with heart trouble and the effects of the heat acted more remotely Later the weather has become more pleasant and enteritis and cholera infantum has not been manifested to a very great degree

THE PUBLIC SERVICE

Appointments Assignments etc., of Medical Officers — To the 1st Corps at Chickamauga Ga Capt Henry P Birmingham U S A To the 2d Corps at Camp Alger Falls Church, Va as brigade surgeons Major Wm H Devine, U S Vols , to report to Major General Graham brigade not specified Major Peter D McNaughton U S Vols , to report to General Duffield Major George W Crille U S Vols to the 2d brigade 1st division To the 3d Corps at Chickamauga Ga Capt Eugene L Swift, U S A To the 4th Corps General J J Coppinger at Tampa Fla Major W Fitzhugh Carter and Capt P R Egan, U S A To the 7th Corps General Fitzhugh Lee at Tampa Fla Major Geo T Vaughan U S Vols brigade surgeon and Capt Jefferson R Kean U S A To the Philippine expedition Lieutenant Franklin M Kemp, U S A Acting Asst Surgeons C F de Mey from Louisville Ky , and A E Halstead from Chicago, Ill To the Leiter Hospital Major John W Bayne U S Vols brigade surgeon and Acting Asst Surgeon Edwin P Hayward *To the general hospital at Ft McPherson,* Atlanta Ga Capt Chas E B Flagg U S A the order sending Capt R S Woodson U S A to this hospital was revoked To the hospital train under Major Charles Prichard, U S A Capt H R Stiles U S A From the hospital ship *Relief* to Ft Slocum N Y Acting Asst Surgeon Thomas A Smith From Washington Bks , D C to San Francisco, Cal , accompanying a battalion of artillery Acting Asst Surgeon S Melville Waterhouse returning thereafter to his station

Resignation —Major G Frank Lydston, 2d Illinois Vol Infantry

Nominations —1st Vol Infantry Wm F Starley of Texas as Surgeon and Henry A Ingalls of Texas as Asst Surgeon 3d Vol Infantry James A Toole of Georgia, as Asst Surgeon 9th Vol Infantry James Mitchell of Pennsylvania and Joseph T Scott of Louisiana as Asst Surgeons 10th Vol Infantry Thomas McCormick Lippitt of Virginia as Asst Surgeon

Nominations confirmed—Dr Edward Martin of Pennsylvania and Dr Ernest Taylor Tappey of Michigan to be brigade surgeons with the rank of Major Wm F Starley of Texas to be Surgeon, Heny A Ingalls of Texas and James Greenup Boyd of Texas to be Asst Surgeons of the 1st Regiment of Volunteer Infantry Joseph A. Guinn of Georgia to be Asst Surgeon of the 3d Regiment Frank P Robinson of Tennessee, to be Surgeon of the 6th Regiment John F Dunshire of Louisiana to be Asst Surgeon of the 9th Regiment and George N Stoney of Georgia and John C Dysart of Texas to be Asst Surgeons of the 10th Regiment

It may not be amiss to mention the fact that these are the results of the purest clinical observation and not those of laboratory toil I do not wish, gentlemen, to depreciate the results of experimentation and of exactness, so-called, but I do chafe under what at times, looks like absurd demand and unjust restriction One is frequently reminded of Hamlet's fine frenzy "Why, look you now, how unworthy a thing you make of me You would play upon me, you would seem to know my stops, 's blood! do you think that I am easier to be played on than a fife?"

Gentlemen, I will not detain you further An attractive program awaits us, and in its consideration I know that we shall derive pleasure and profit, and I trust that in succeeding years the Section on the Practice of Medicine may look back to its Denver meeting as productive of good and as a disseminator of knowledge, one accompanied as well with much pleasure

ORIGINAL ARTICLES

THE MODERN TREATMENT OF GUNSHOT WOUNDS IN MILITARY PRACTICE

BY N SENN, M D

LIEUTENANT COLONEL U S VOLUNTEERS, CHIEF OPERATING SURGEON WITH THE ARMY IN THE FIELD

Two important causes are destined to bring about a radical change in the treatment of gunshot wounds as practiced in the war of the rebellion and as will be taught and advised in the Spanish-American and future wars 1, the modifications which the weapon and projectile have undergone since that time, 2, the introduction into general practice of aseptic and antiseptic surgery The diminution in the caliber of the bullet, the metallic jacket, the substitution of smokeless for black powder, the greater velocity and power of penetration of the missile, are conditions and influences which must necessarily modify the character of wounds inflicted with the modern weapon Volumes have been written on this subject by writers in all countries in which the old weapon has been abandoned and the new one introduced Numerous experiments have been made on cadavers and animals for the purpose of studying the effects of the modern projectile on the tissues with a view of obtaining reliable information as to the changes which will become necessary in the rational treatment of gunshot wounds in modern warfare Experimental investigation has done much in pointing out some of the changes we may expect to see in the character of gunshot wounds during the present and coming wars, but many of the conclusions drawn from them will have to be modified after we have had an opportunity to study such wounds on a large scale on the battlefield There can be no question but that the living body and the cadaver represent two entirely different mediums in studying the effects of the modern bullet From a practical standpoint there remains no doubt as to the following facts, which will be confirmed by future experience in the treatment of gunshot injuries inflicted with the small caliber bullet 1 Few bullets will be found lodged in the body 2 Wounds will resemble more closely incised than contused wounds 3 Range will have more influence in changing the character of the wound 4 Diminished risk of infection 5 Dangerous primary hemorrhage will be more, secondary hemorrhage less frequent 6 More difficult extraction of the bullet As to the relative number of dead and wounded and the adaptation of the jacketed bullet to become encysted, are subjects on which we can only theorize and conjecture, subjects which can only be definitely settled by an extensive experience We are better prepared to predict the influence wrought by the recent discoveries and advancements in surgery on the treatment of gunshot wounds and the fate of the wounded The antiseptic treatment of wounds as taught and practiced by the immortal Lister, and asepsis as developed by the German surgeons with the distinguished Volkmann as their leader, are destined to minimize the remote dangers of gunshot wounds and other open injuries inflicted on the battlefield We can safely repeat with the late Professor von Nussbaum, the most enthusiastic follower of Lister "*The fate of the wounded rests in the hands of the one who applies the first dressing*" This is the motto that every military surgeon must adopt and carry into effect To this motto I should like to add a cast-iron rule that should never be transgressed and which, if observed without exception, will guard against one of the most fruitful sources of infection, and that rule should be *Never probe a bullet wound on the battlefield* The experience of the past has taught us the wisdom of adopting such a universal rule As our enemy is armed with the Mauser rifle, the cases will be few where there is any indication for probing wounds, and in those few where the bullet has lodged in the body, exploration should be absolutely prohibited until the patient reaches the field hospital where the facilities for asepsis are at hand and instruments of precision in diagnosis can be employed in locating the missile

FIRST AID DRESSING

The idea of rendering first aid to the wounded immediately upon receipt of injury in modern warfare must be abandoned Alarming hemorrhage from a large vessel of any of the extremities will in many instances be arrested by the patient himself or his nearest comrade by the use of some sort of circular constriction, but the legitimate function of the hospital corps men will begin after the engagement Desirable as it may appear, attempts at disinfection of the wound or wounds will prove impracticable and useless on the battlefield Time alone is an important element in contraindicating such a course Hundreds and thousands may demand attention, to say nothing of the limited facilities for procuring for the wound and its vicinity an aseptic condition The wisest and safest course to pursue under such circumstances is to make an intelligent use of the first aid dressing package which should be found upon the person of every soldier, officers and men The average first aid package, the one devised by von Esmarch included, is too cumbersome A first aid package, to meet the indications for which it is employed, should include 1, an efficient antiseptic powder, 2, a sufficient quantity of a hygroscopic material to absorb the primary wound secretions and serve as a filter for the wound, 3, a handkerchief or bandage with which to retain the dressing and in case of necessity to be used in constructing a Spanish windlass, 4, safety pins A few years ago I devised such a package It contains about a teaspoonful of a powder composed of four parts of boracic acid, one part of salicylic acid, about one drachm of absorbent cotton, a piece of sterile gauze forty inches square and a number of safety pins. The powder is lodged in the center of the cotton compress and is to be applied directly to the wound when the package is used. The package when compressed is small and wrapped in gutta percha. Every soldier of the Illinois volunteers carries such a package and is conversant with the manner in which it should be employed. The piece of gauze can be readily transformed into a Mayor triangular bandage and serves as an excellent substitute for Esmarch's bandage, which is heavier and requires much more space. The figures printed on Esmarch's bandage are useful for instruction but absolutely without value on the battlefield. In rendering first aid the injured part should be divested of clothing with as little disturbance of the wound as possible. Instead of removing the clothing it is much better to make free use of scissors and knife in gaining access to the wound. If two wounds are found, both must receive the same attention and care in protecting them against infection. I have used the antiseptic powder which I have referred to on a very large scale and can speak in positive terms of its potent antiseptic properties. It resembles in its effects on the tissues Thiersch's solution, being odorless, non-irritating and non-toxic. It forms with the cotton and primary wound secretions a crust which effectually seals the wound. In the absence of grave symptoms such as hemorrhage, this dressing should not be disturbed until the patient reaches the field hospital, and in many cases healing of the wound will take place without further interference. The immobilization of the injured part, particularly in cases of compound fracture of the extremities, constitutes an important part of the manifest duties of those who render first aid to the wounded. In all large engagements the supply of mechanical supports carried by the men of the hospital corps will be exhausted long before all of the wounded have received attention. Splints must be improvised. Rifles, sabers, bayonets, bark, branches of trees, shrubs, etc., the chest in fractures of the upper extremity, the opposite limb in fractures of the thigh or leg, will have to be utilized in procuring rest for the injured limb in transporting patients from the line of battle to the first dressing station. It is here that the surgeons will supplement or improve the work done by the litter bearers and hospital corps. It is for the purpose of doing away with the necessity of using splints that a German military surgeon has recently devised a litter on the plan of a double inclined plane for the lower extremities, a description of which he gave before the military section of the International Medical Congress held in Moscow last summer. In the absence of a litter of such special construction the same object is attained by securing the same position for the injured limb by a roll made of a blanket, clothing, knapsack, drum straw, etc. It is my opinion that the transportation of the wounded suffering from a fracture of the lower extremity can be done with less pain and with greater security against additional injuries if the fractured limb is placed in a flexed than a straight position. If this statement is found to be correct by future observations the manner of dressing such cases must undergo a material change in the future. The manner of handling, carrying and conveying patients from the field to the hospital, suffering from fracture of the lower extremity, is a subject of great importance to those who have in charge the instruction of the hospital corps and company bearers.

ARREST OF HEMORRHAGE ON THE FIELD

Life will be placed in jeopardy and deaths will occur more frequently from internal than external hemorrhage; in the treatment of the former little can be done in the field, and the latter class will come more frequently under the care of more professional men than surgeons. Ligation of arteries in the field will prove impracticable in most instances. The company bearers and hospital corps men should be fully instructed in the details of the various hemostatic resources applicable in emergency work. Elevation of the injured part, hyperflexion, digital compression and antiseptic tamponade are some of the measures employed which can be entrusted to intelligent and well instructed laymen in arresting hemorrhage. Some form of circular constriction will, however, most frequently be relied upon in arresting hemorrhage complicating gunshot wounds of the extremities. The advantages and dangers attending this method of arresting hemorrhage must be made a prominent feature in giving instructions on first aid. The technique of the procedure, whether it consists in the use of the typical Esmarch's elastic constrictor, a pair of suspenders or the Spanish windlass, must be fully *explained and demonstrated on the living subject*. The fact must be impressed that it is of great importance to render the limb that is to be constricted comparatively bloodless by elevation before the constrictor is applied. The next most important advice to be carried into effect in the use of circular constriction is to *constrict quickly and with sufficient firmness to interrupt at once and completely both the arterial and venous circulation*. A question of immense and far reaching importance, and one which has not as yet been definitely answered is: How long is it safe to continue the constriction? There must be, and there is, a limit as to length of time it is safe to exclude blood supply from living tissues. Although cases have been reported in which elastic constriction was continued for three to twelve hours without any serious immediate or remote consequences following, yet the consensus of opinion among surgeons, I am sure, at the present time would be opposed to excluding the blood supply from an entire limb, the seat of a gunshot injury, for a longer time than three to four hours. The danger of gangrene is always greater in constricting an injured than a healthy limb. A number of years ago I made an extended series of experiments on dogs to determine if possible, the maximum length of time it would be safe to continue elastic constriction. The limb was invariably constricted near its base. The time varied from an hour and a half to twenty-seven hours. In a number of cases temporary incompetence of the muscles and temporary paralysis followed when constriction was continued beyond four hours, but the degree of functional disturbance was not always proportionate to the length of time. In only one instance did gangrene occur, and in this case constriction was continued for seventeen hours, while the maximum time was twenty-seven hours. This subject is of special interest to the military surgeon, as from the very nature of things if circular constriction is resorted to as a hemostatic agent on the battlefield a considerable length of time must necessarily intervene before the wounded reach the first dressing station or field hospital, where it is removed and hemorrhage arrested by direct and permanent hemostatic measures. I should consider it dangerous to extend the time beyond from three to six hours, and should insist that within this limit of time the patient should be placed in charge of a surgeon fully equipped to substitute for it the ligature, aseptic tamponade or some other direct hemostatic agent

LOCATING, FINDING AND EXTRACTING BULLETS

The new weapon will minimize the surgeon's work in locating, finding and removing bullets In the vast majority of cases requiring surgical treatment two wounds will be found, the wound of entrance and exit marking the location and direction of the tubular wound made by the bullet The cases in which the jacketed bullet will be found in the body indicated by the existence of only one wound will be exceptional During my visit to the military hospitals in Greece last summer I found a good many wounds made by the small caliber projectile, but only in two cases could I obtain authentic information to the effect that the bullet was found in the tissues of the body and was removed by operative procedure In the military hospitals in Turkey I found numerous cases in which the old-fashioned large caliber lead bullet used by the Greeks have been removed by operation or remained lodged in the body The search for bullets in modern warfare, if made at all, will be reserved until the patient has reached the field hospital, when the surgeons will have at their disposal the necessary instrument for making an accurate diagnosis, and the essential facilities for making operations under the strictest aseptic and antiseptic precautions Before using the finger or probe in exploration for a bullet the wound and the surface for a considerable distance around it should be thoroughly disinfected to guard against all possibility of infecting the wound during the examination or attempts at removal of the bullet, should such a course be deemed advisable after the completion of the examination One of the most important rules to be followed in locating a bullet in the body is to place the patient and the part injured as nearly as possible in the same position as when occupied the moment the injury was received The truth of this statement was well exemplified in the case of Gen Hancock A number of surgeons of good repute had made repeated attempts to find the bullet by probing but failed At last he availed himself of the services of Dr Reade, the present Surgeon-General of Pennsylvania, who placed the General in the same position he occupied in the saddle, and the first attempt to locate the bullet proved successful The metal clad bullet has to a certain extent rendered the famous Nélaton probe obsolete However, leaden bullets will be used to a greater or less extent by certain branches of the military force, and the porcelain tip will occasionally prove of service The great objection to Nélaton's bullet probe is the size of the porcelain tip *The end of the probe should correspond approximately in size to the caliber of the tubular wound* By using an instrument constructed on this principle the danger of making false passages is greatly reduced I have had a bullet probe constructed by Truax, Greene & Co, with two porcelain tips, one at each end rivited to the end of the silver probe, one 22 and the other 38 caliber In parts of the body composed of deep muscular planes and layers of fascia it is often found absolutely impossible to follow the track of the bullet with any kind of probe It is in such cases, when it is deemed prudent, from the symptoms presented and the probable location of the bullet, to explore the track that the surgeon will take advantage of the use of the knife in dilating the track, using the probe step for step as a guide The use of the X-ray will prove of the greatest value in all future attempts to locate bullets In order to locate the bullet with sufficient accuracy to enable the surgeon to determine the propriety of an operation for its removal, and to guide him safely in his work photographs from at least two directions will have to be taken Every field and general hospital should be supplied with an X-ray apparatus, and in all difficult cases this, one of the most recent diagnostic inventions, should be made use of before undertaking an operation, and in preference to repeated recourse to the probe The famous old-fashioned American bullet forceps has lost its distinction in military surgery by the introduction of the metal clad bullet The bullet forceps which I show you I devised a few years ago *It is so constructed* that it serves at the same time as a useful bullet probe The grip of the instrument upon any metallic bullet regardless of its caliber is firm, the bullet once grasped can be extracted without difficulty, as slipping of the instrument is almost an impossibility It seems to me that when a small caliber bullet lodged in an important anatomic locality, difficult of approach and not giving rise to any serious symptoms, it should be allowed to remain with the hope that it may become encysted without causing any remote serious consequences Such a conservative course in well selected cases will unquestionably yield better results than the too common routine practice to extract the bullet at all hazards

GUNSHOT WOUNDS OF THE EXTREMITIES

Besides the ordinary treatment of gunshot wounds regardless of the anatomic location of the injury, bullet wounds of the extremities, where complicated by fracture or joint injury, present to the surgeon special clinical features of great importance Injuries of soft tissues not implicating important vessels and nerves, under modern treatment, should heal in a short time under the first dressing with little or no functional impairment The existence of a gunshot fracture regardless of the extent of bone injury no longer furnishes a legitimate indication for a primary amputation Such injuries under appropriate aseptic and mechanical treatment are amenable to a satisfactory repair in the course of time They are the cases that tax the ingenuity of the surgeon in applying and maintaining the necessary mechanical support until the fracture heals by bony consolidation with the limb in a satisfactory useful position In gunshot fractures of the femur extension and immobilization will now, as it has for a long time, constitute the generally accepted treatment A determined, strong protest must be made against the unnecessary removal of detached and partially detached fragments of bone If the wound remains aseptic the loose fragments of bone will not only retain their vitality but will take an important part in the restoration of the continuity of the bone and add materially to the functional result Débridement, more or less extensive, only becomes necessary and should be performed in case the wound becomes infected In such an event the loose infected fragments of bone should be promptly removed, free tubular drainage established, and the wound throughout subjected to thorough disinfection If the ordinary measures should fail, continued irrigation with a saturated solution of acetate of aluminium will very often bring about the desired results and obviate the necessity of an amputation Fixation and suspension in such cases will not only procure comfort for the patient but will answer an excellent purpose in securing and maintaining coaptations and in facilitating drainage and irrigation As soon as the fracture has united with sufficient firmness to render extension superfluous, the limb should be immobilized in a circular plaster of Paris splint, extending from base of toes to the groin, and in high fractures including the pelvis, after which the patient can be permitted to walk about with the aid of crutches In gunshot fractures of the leg early immobilization in a circular plastic splint is to be advised and yields the most gratifying results Watchful control of patients suffering from such injuries and treated by the use of the plaster of Paris bandage is essential in guarding against disastrous complications and in obtaining satisfactory functional results Gunshot injuries of any of the large joints are now within the range of successful conservative treatment I have seen in the military hospitals, both in Greece and Turkey, soon after the close of the war, gunshot wounds of the hip, knee, ankle, shoulder, elbow and wrist joints, not only recover without any operative interference whatever, but in many of the cases a fair degree of motion and good use of the limb rewarded the conservative treatment The indications for primary amputation of a limb, or part of a limb, should at present be restricted to cases in which the nutrition is suspended or seriously threatened by the coexistence of vascular lesions incompatible with the vitality of the tissues at and below the seat of injury In cases of doubt the soldier is entitled to the benefit of the same, and the conservative treatment should be carried to its ultimate limits until the appearance of complications demonstrate its futility and dictate the propriety of resorting to a mutilating operation It is always more creditable to the surgeon to save a limb than to remove it, and the soldier is entitled to the benefit of conservative surgery as much as the civilian, and the plan of the military surgeon of the future should and will be to limit more and more the indications for amputations

GUNSHOT WOUNDS OF THE SKULL

It is my intention to limit my remarks under this heading to penetrating gunshot wounds of the skull The few cases of this class of injuries that will come under the observation of the military surgeon will invariably require operative interference, provided it holds out any encouragement whatever of saving life In case a bullet has passed through the skull and its contents the entire scalp should be thoroughly shaved and disinfected The wound of entrance must be enlarged sufficiently to expose the perforation freely, which is then enlarged with chisel, DeVilbiss or rongeur forceps sufficiently to enable the surgeon to remove the loose spicula of bone, which are frequently found some distance in the brain With a long eyed probe a strip of iodoform gauze large enough to loosely pack the tubular visceral wound should be inserted from the wound of entrance to the wound of exit, and the rough gauze drain made to project a few inches beyond the surface of each wound Thorough capillary drainage of this kind will prevent accumulation of primary wound secretion in the interior of the skull, and will be of value in arresting capillary hemorrhage A large hygroscopic dressing enveloping the entire scalp and covering both wounds, constitutes the dressing and must be held in place by a few turns of plaster of Paris bandage The drain must be allowed to remain until the danger of infection is passed, when it is to be removed gradually by shortening it every day or two In case the bullet should be found lodged in the interior of the skull the wound of entrance must be treated in the same manner and the bullet located by the careful use of Flubrer's aluminium probe A counter opening may become necessary in removing the bullet if it has reached the opposite side of the skull or when it has become deflected or arrested in its course near the surface of the brain, in case the locality in which it has become lodged warrants operative intervention In all visceral injuries of the contents of the skull resulting from gunshot wounds capillary or tubular drainage or a combination of the two is indicated and should be continued until there is no further danger of infection, hemorrhage or accumulation of wound products, when the drain is to be gradually removed The value of the X-ray in locating bullets in the interior of the cranium has as yet not been definitely ascertained

GUNSHOT WOUNDS OF THE CHEST

Penetrating gunshot wounds of the chest are attended by an enormous mortality owing to the physiologic importance of the organs which it contains Visceral wounds of the heart and large blood vessels usually result in death in a few moments from acute anemia Hemorrhage into the pleural cavity and into the large bronchial tubes interferes mechanically with the respiratory functions and frequently proves fatal in a short time and if the patient recovers from its immediate effects life is placed in danger by complications which so often are caused by the hemothorax The accumulation of such a large quantity of blood in the pleural cavity is not incompatible with a speedy recovery, as when the blood is aseptic its removal by absorption is accomplished in a short time

Experience during the War of the Rebellion proved that in gunshot wounds of the chest the chances for life were much better if the bullet passed through the chest than if it remained lodged in the body I saw a number of soldiers of the Graeco Turkish war that had been shot through the chest convalescent and in fair health a few weeks after the injury was inflicted We have made little progress in the treatment of penetrating wounds of the chest Direct operative treatment of visceral wounds of the heart and lungs is always attended by imminent risk to life from pulmonary collapse This source of danger stands in the way of direct treatment of visceral wounds of the chest Hemorrhage from wounds of the lung is often corrected spontaneously by the accumulation of blood in the cavity of the chest, causing temporary pulmonary collapse and tamponade of the tubular visceral wound by the formation of a blood clot Free incision of the chest wall has been strongly advocated by several French surgeons in cases of penetrating gunshot wounds of the chest with a view of arresting hemorrhage by ligature, tamponade or the use of the cautery, but the profession on the whole, for good reasons, is opposed to such heroic treatment Unless the source of hemorrhage is one of the intercostal or the internal mammary artery it is advisable to rely on nature's resources in arresting the bleeding Hemorrhage from the intercostal arteries can be effectually checked by tamponade, using for this purpose an hour glass shaped tampon of iodoform gauze Rest in the recumbent position, with the chest slightly elevated, is essential in aiding spontaneous arrest of hemorrhage and in the prevention of complications A rise in the temperature during the first forty eight hours is no indication of the existence of sepsis, as with few exceptions it indicates a febrile disturbance, caused by the absorption of fibrin ferment, the so-called fermentation fever Should later symptoms set in suggestive of septic infection, aspiration should be promptly resorted to and if not followed by speedy improvement no time should be lost in subjecting the patient to the same medical treatment as advised and practiced for empyema, that is, rib resection, free incision and drainage The production of an artificial pneumothorax or hydrothorax by the introduction into the pleural cavity on the injured side of a non-toxic gas or filtered atmospheric air or sterilized water or non-toxic antiseptic solutions has not proved satisfactory in the treatment of intrathoracic traumatic hemorrhage From what has been said it is clear that the best treatment in penetrating gunshot wounds of the chest consists in hermetically sealing the wound of entrance and exit, if such exists, under strict aseptic precautions and watch for and treat subsequent complications as they present themselves

GUNSHOT WOUNDS OF THE ABDOMEN

The greater part of this paper will be devoted to this subject, as recent discoveries and improvements in surgery have done more for the successful treatment of visceral wounds of the abdominal organs than the injuries of any of the organs contained in the remaining large cavities of the body The triumphs that have signaled the practice of civilian surgeons in the operative treatment of intra-abdominal injuries must be repeated on the battlefield I look hopefully for many successful results in the operative treatment of gunshot wounds in military practice I will in this connection limit my remarks to penetrating wounds, taking it for granted that when patients suffering from adbominal wounds are brought to the field hospitals the surgeons in charge will consider it their imperative duty to make a positive distinction between penetrating and non-penetrating wounds before assuming the responsibility of opening the abdomen In the discussion of penetrating wounds of the abdomen I shall quote freely from the forthcoming third edition of the American Textbook of Surgery from the chapter which treats of this subject Sword, bayonet and other stab wounds will diminish in frequency with the development of modern scientific warfare The penetrating wounds of the abdomen that will come under the observation of the military surgeon will with few exceptions be wounds inflicted with the modern small caliber projectile The visceral wounds, the wound of entrance and exit will be small, too small for digital exploration It is perhaps superfluous to make the statement here that *a penetrating wound of the abdomen should never be probed either for diagnostic or therapeutic purposes* If any doubt exists as to whether or not the bullet has entered the abdominal cavity it is far better and safer to dilate the track by the use of the knife, relying on the probe as a guide, than to work in the dark with the probe and by doing so increasing the possibilities of infecting the peritoneal cavity Quite recently the assertion has been made by several prominent surgeons that laparotomy should be performed in all cases where it can be shown that penetration has occurred It must, however, be admitted that, in the absence of serious visceral lesions, penetrating wounds of the abdomen are injuries from which the patients are very likely to recover without operative treatment, and that when such patients are subjected to laparotomy death may occur solely in consequence of the operation It is undoubtedly true that in most cases of spontaneous recovery after penetrating gunshot wound of the abdomen the favorable termination has been due to the absence of serious visceral lesions, which some hold to be invariably present in such cases A number of years ago I made a series of experiments on the cadaver for the purpose of demonstrating that occasionally a bullet can traverse the abdominal cavity in certain directions without producing a visceral wound that would warrant a laparotomy The cadaver, a marasmic adult male was placed in the erect position against a wall and the shooting was done with a 38 caliber rifle at a distance of 30 feet The bullet was fired in every instance in an antero-posterior direction and invariably passed through the body Sixteen shots were fired and examination of the abdominal cavity carefully made by following the track of each bullet, showed that four of the bullets traversed the abdominal cavity without injuring the stomach or intestines or any of the large abdominal vessels In each of these four experiments the bullet entered the abdomen at or a little above the umbilical level In all experiments in which the bullet entered below the umbilical level intestinal perforations were found Absence of visceral lesions has been also demonstrated during an operation or at the postmortem During the Graeco-Turkish war several cases of gunshot wound of the abdomen recovered under a conservative plan of treatment In nearly all of these cases the bullet entered the abdomen above the umbilicus, the most favorable location for the escape of intestines from the missile, the patient being in a standing position

In two out of sixteen cases of penetrating gunshot wounds of the abdomen which came under the observation of the writer the absence of visceral injuries of the gastro-intestinal canal was demonstrated by the use of the hydrogen gas-test, and both of these patients recovered without resort to laparotomy Clinical experience and the result of experiment show conclusively that laparotomy should not be performed simply because a bullet has entered the abdominal cavity, but that its performance should be limited to the treatment of intra abdominal lesions which, without operative interference, would tend to destroy life A bullet which passes through the lower part of the abdomen from side to side or obliquely is almost sure to produce from four to fourteen perforations of the intestines, while absence of dangerous visceral complications may be inferred with some degree of probability if it crosses the abdominal cavity in an antero-posterior direction at, or a little above, the umbilical level

SYMPTOMS

The general symptoms in cases of penetrating gunshot wounds of the abdomen, with the exception of those due to profuse hemorrhage, furnish very little information in reference to the existence or absence of visceral complications Severe shock may attend a single non-penetrating wound, and it may be wanting, or at least slight, in cases of multiple perforation of the intestines It is not an uncommon occurrence for a patient who has received a penetrating wound of the abdomen to walk several blocks, or even a number of miles, without a great deal of suffering and without showing any symptoms of shock, and yet for a number of intestinal perforations to be revealed at a subsequent operation or autopsy Vomiting occurs with equal frequency in parietal wounds and in simple penetrating wounds as when the viscera have been injured Vomiting of blood points to the existence of a wound of the stomach

Pallor is present in all penetrating wounds of the abdomen, soon after the receipt of the injury, and it is only more pronounced when produced, at least in in part, by sudden and severe hemorrhage Pain is very unreliable and often misleading symptom, as it may be moderate or almost completely absent soon after the injury has been inflicted, even when multiple perforations are present The pulse at first is slow and compressible in all cases, and nothing characteristic in its qualities is observed even if the stomach or intestines have been wounded Hemorrhage caused by wounds of any of the large organs, as the spleen, liver or kidneys, gives rise to progressive acute anemia, small rapid pulse, cold clammy perspiration, dilated pupils, yawning, vomiting, and in extreme cases, syncope and convulsions The local symptoms are of no more value in determining the existence of visceral injuries in penetrating wounds of the abdomen than are the general symptoms which have just been enumerated External hemorrhage is slight or entirely wanting, unless an artery or vein in the abdominal wall has been injured The bleeding from visceral wounds gives rise to accumulations of blood in the peritoneal cavity, occult or internal hemorrhage, this can be recognized by physical signs which denote the presence of fluid in the free abdominal cavity and by general symptoms indicating progressive anemia, increasing pallor of the face and of the visible mucous membranes, small feeble pulse, superficial sighing, respiration and dilated pupils Wounds of the stomach often occasion hemorrhage into this organ and hematemesis Blood in the stools seldom follows hemorrhage into the bowels from intestinal wounds sufficiently early to be of any diagnostic value

Circumscribed emphysema in the tissues around the track made by a bullet has been regarded as an important sign of the existence of intestinal perforation This symptom is misleading and absolutely devoid of diagnostic value, as this condition has frequently been observed in non-penetrating wounds of the abdominal wall, resulting from the entrance of air into the loose connective tissue, or later by gas formation as one of the results of putrefactive infection The accumulation of any considerable quantity of gas in the peritoneal cavity sometimes can be recognized by the disappearance of the normal liver dullness, caused by the presence of gas between the surface of the liver and the chest wall This condition has been sought for in cases of perforating wounds of the abdomen as a diagnostic sign, and if found has been taken as a sure indication of the existence of visceral wounds of the gastro intestinal canal This is not, however, always the case Adhesions between the surface of the liver and chest wall may have existed before the injury was received, or the amount of gas present may be insufficient to give rise to this sign The escape of the contents of the wounded stomach or intestines through the external wound, is a rare occurrence, and is possible only when the external wound is sufficiently large and straight and when it corresponds with the location of the visceral wound, or in the event of pre-existing adhesions between the abdominal wall and the injured portion of the gastro-intestinal canal External extravasation occurs more frequently in wounds of the large than the small intestine When this symptom is present it is conclusive proof of the existence of a visceral wound of the gastro-intestinal canal and the character of the extravasation will furnish reliable information as to the anatomic location of the visceral injury With the exception of the last mentioned symptom and the indications pointing to the necessity of arresting internal hemorrhage, there is nothing about the local or general symptoms in cases of penetrating gunshot wounds of the abdomen that would enable the surgeon to decide with any degree of certainty soon after the injury was received, whether or not visceral injuries existed and consequently, whether laparotomy should or should not be performed

DIAGNOSIS

If a gunshot wound has penetrated the abdominal cavity and the general symptoms and local signs lead us to suspicion the existence of dangerous internal hemorrhage, *no time should be lost in further efforts to make an accurate anatomical diagnosis*, as sufficient evidence has been obtained to warrant a laparotomy for the purpose of preventing death from hemorrhage by the direct surgical treatment of the visceral injuries If no such urgent indication presents itself it is desirable that the existence of visceral lesions demanding surgical treatment should be ascertained before the patient is subjected to the additional risk incident to a laparotomy, since a simple penetrating wound of the abdomen is an injury from which the majority of patients recover without operative treatment, and since visceral wounds of the gastro intestinal canal are attended by such frightful mortality without surgical interference, the practical value and importance of a correct diagnosis before deciding upon a definite plan of treatment become obvious It is apparent that if some reliable diagnostic test could be applied in cases of penetrating wounds of the abdomen which would indicate to the surgeon the presence or absence of visceral lesions of the gastro intestinal canal, the indications for aggressive or conservative treatment would become clear The writer has shown by his experiments on animals, and later by his clinical experience in the treatment of a number of cases of gunshot wounds of the abdomen that rectal insufflations of hydrogen gas can be relied upon in demonstrating the existence of perforations of the gastro-intestinal canal before opening the abdomen He has shown conclusively that if the abdominal muscles are completely relaxed under the influence of a general anesthetic, hydrogen gas or filtered air can under safe pressure be forced from the anus to the mouth if no perforations exist, and if such are present the gas will escape into the peritoneal cavity, where its presence can be readily detected by the physical signs characteristic of a free tympanites or by its escape through the external opening Theoretical objections have been made against this diagnostic test on the ground that it occasionally fails in demon[illegible] the [illegible]ence of a perforation, and that it is [illegible] insi[illegible] fecal extravasation In reply to this I must say that it has never failed in my hands in making by its aid a correct diagnosis, and the fallacy of the second objection I have shown repeatedly by experiments on animals Hydrogen gas is a non-toxic substance, endowed with valuable inhibitory antiseptic properties, and is absorbed from all the larger serous cavities and connective tissue within a few hours Pure zinc and sulphuric acid should be used in generating the gas, which is collected in a rubber balloon holding at least four gallons The rubber balloon used for this purpose is square in shape and is connected with the rectal tip by means of a rubber tube six feet in length and supplied with a stop-cock near its proximal end In applying the test an assistant presses the margin of the anus against the rectal tip, so as to prevent the escape of the gas, while another assistant forces the gas along the intestinal tube by pressing or sitting on the rubber balloon The gas passes through the ileocecal valve under a pressure of two and a half pounds to the square inch and is announced by a distinct gurgling sound, which can always be distinctly heard by applying the ear or stethoscope over that region If the rectum or colon has been perforated the gas will not reach the small intestine, as it will escape into the peritoneal cavity under less pressure than is required in rendering the ileocecal valve incompetent As soon as the gas reaches a perforation large enough to permit its escape it will enter the peritoneal cavity and escape through the external wound if this has been freely laid open down to the peritoneum If the external wound is in a location which points to injury of the stomach, this organ should be insufflated through a rubber stomach-tube, and if this test proves negative it is to be followed by rectal insufflation It is impossible to inflate the intestines to any extent from the stomach

TREATMENT

The propriety of surgical interference in cases of penetrating gunshot wounds of the abdomen will depend upon one of three things

1 General conditions of the patient
2 Dangerous internal hemorrhage
3 Wounds of the stomach or intestines large enough to permit extravasation If the patient is pulseless and presents other indications of approaching death, operation is unjustifiable, as it would only hasten the end and bring reproach upon surgery and undermine the confidence in the life saving value of the operation among the troops Dangerous internal hemorrhage that will come to the notice of military surgeons in gunshot wounds of the abdomen will be the cases in which the vascular organs of the abdomen, the liver and spleen, or some of the larger vessels of the mesentery or omentum have been injured Delay in such cases is dangerous The abdomen should be opened and the hemorrhage arrested The symptoms are apt to be unusually severe if the hemorrhage is sudden, progressive, if the loss of blood is gradual In the latter case it may be prudent to watch the case for some time for more pressing indications, as it is well known that spontaneous arrest of hemorrhage may occur and large quantities of aseptic blood is removed from the peritoneal cavity in a short time Visceral lesion of the gastro-intestinal canal large enough to permit extravasation are, with very few exceptions, mortal wounds, the existence of which can leave no doubt in the mind of the surgeon to resort promptly to abdominal section as offering the only chance to save life

PREPARATION OF PATIENT

A patient suffering from a penetrating gunshot wound of the abdomen should be properly prepared before he is subjected to laparotomy If the stomach is filled with food, a salt water emetic should be given for the purpose of emptying its contents, or better still, this can be done by the use of the stomach siphon tube The rectum and colon must be emptied by a copious enema of warm water, to which may be added a tablespoonful of common salt The unloading of the gastro-intestinal canal will not only facilitate the operation but will have a favorable influence in securing rest for the injured part A hypodermatic injection of gr 1/4 of morphin and gr 1/30 of strychnia should be given shortly before the anesthetic is administered, as these remedies in the doses specified assist the action of the anesthetic, secure rest for the intestines, and sustains the action of the heart If the patient is much prostrated two ounces of whisky diluted with four ounces of warm water should be given by the rectum The whole abdomen should be thoroughly disinfected Before and during the operation the use of external dry heat will do much in preventing shock and in aiding the peripheral circulation Compresses, towels and several gallons of warm normal solution of salt must be provided The operator should do the work with as little assistance and as few instruments as possible, as the danger of infection in emergency work is apt to be proportionate with the number of assistants employed and number of instruments used Hands, instruments, suturing material, in fact everything that is to be brought in contact with the wound, must be sterilized In military surgery silk will have the preference over catgut A hospital tent with a floor will be an admirable operating room in all semi-tropical climates Anesthesia should be commenced with chloroform until the patient is under its full influence, when it should be continued with ether

INCISION

In the majority of cases the median incision should be made, as it affords advantages which give it the preference It should always be selected in cases of gunshot wounds of the stomach, and where the wound of entrance is located near the median line A median incision affords most ready access in the treatment of wounds of the small intestine If the insufflation test is used, it will prove sometimes of value in deciding upon the location of the incision If in gunshot wounds of the upper portion of the abdomen, direct inflation of the stomach through an elastic tube reveals the existence of perforation of this organ the median incision should be selected If rectal insufflation yields a positive result before the gas has passed the ileocecal valve, the incision should be made over the wounded portion of the colon, which is usually indicated by the course of the bullet A wound in the transverse colon can be found and dealt with most effectually through a high median incision, perforation of the cecum or of the ascending colon calls for a lateral incision directly over the wounded organ, while a lateral incision on the left side is indicated if from the direction of the bullet it is evident or probable that the colon below the splenic flexure is the seat of the visceral injury Laparotomy performed for the arrest of hemorrhage should always be done by making a long median incision, which will afford the most direct access to the different sources of hemorrhage Very often it will be advisable to make the incision in the line of the wound of entrance, more especially in cases where a lateral incision is indicated from the location of the wound from the course of the bullet, and perhaps from the results obtained by the insufflation test

ARREST OF HEMORRHAGE

In opening the abdomen in the treatment of internal hemorrhage the surgeon undertakes a task, the gravity of which it is impossible to foretell To do the work quietly and well he must be perfectly familiar with the anatomy of the abdominal organs, their source of blood supply, and must have full knowledge of all hemostatic resources, the indication for their selection and details of application Profuse intra-abdominal hemorrhage resulting from penetrating gunshot wounds of the abdomen is more frequently of parenchymatous and venous than arterial origin Wounds of the liver, spleen, kidneys and mesentery give rise to profuse and often fatal hemorrhage After opening the peritoneal cavity it is often very difficult to find the bleeding points, as the blood accumulates as rapidly as it is sponged out, and it becomes necessary to resort to special means in order to arrest profuse bleeding sufficiently to find the source of hemorrhage One of two means should be employed 1, intra-abdominal digital compression of the aorta, 2, packing the abdominal cavity with a number of large sponges or gauze compresses Intra-abdominal compression of the aorta below the diaphragm can be readily made by an assistant introducing his hand through the abdominal incision, which in such a case must be larger than under ordinary circumstances Compression made in this manner will promptly arrest the hemorrhage from any of the abdominal organs for a sufficient length of time to enable the surgeon to find the source of hemorrhage, and carry out the necessary treatment for its permanent arrest.

Hemorrhage from a perforated kidney may demand a nephrectomy, if it does not yield to tamponade If the tampon is used an incision in the lumbar region must be made for the removal of the tampon and the parietal peritoneum should be sutured, so as to exclude the peritoneal cavity from the renal wounds Wounds of the liver are sutured with catgut, cauterized with the actual cautery, or tamponaded with a long strip of iodoform or a typical Mikulicz tampon, in either case the gauze is to be brought out of the wound and utilized as a drain

A wound of the spleen, if the hemorrhage does not yield to ligature, suturing or tamponade, necessitates splenectomy, very troublesome hemorrhage is often met with in wounds of the mesentery When multiple wounds of the mesentery, and visceral wounds of the stomach or intestines are the cause of hemorrhage, it is a good plan to pack the abdominal cavity with a number of large sponges, napkins or compresses of gauze, to each of which a long strip of gauze is securely tied, these strips being allowed to hang out of the wound in order that none of the sponges or compresses may be lost or forgotten in the abdominal cavity after the completion of the operation The sponges or compresses make sufficient pressure to arrest parenchymatous oozing as well as venous hemorrhage, if they are placed at different points against the mesentery and between the intestinal coils The sponges are removed one by one from below upward, and the bleeding points secured as fast as they are uncovered The ligation of mesenteric and omental vessels, both arteries and veins, should be done by applying the ligature *en masse* A round needle or Thornton's curved hemostatic forceps are the most useful instruments for this purpose Catgut, as a rule, should not be relied upon in tying a mesenteric vessel, as it is greatly inferior to fine silk

If hemorrhage is profuse this must be attended to before anything is done in the way of binding and suturing the visceral wounds Troublesome hemorrhage from a large visceral wound of the stomach or intestines is best controlled by hemming the margin of the wound with catgut or fine silk In hemorrhage from localities not accessible to ligation and not amenable to tamponade, pressure forceps are applied and allowed to remain for twenty four or forty-eight hours When used in this manner the instrument must be long enough to be brought out of the wound, and is then incorporated in the dressing For the purpose of facilitating the binding and removal of the instrument a strip of gauze is tied to the handle

SEARCH FOR PERFORATIONS

A number of cases have been recorded, and I am sure many more have occurred, in which laparotomy was performed, one or more perforations sutured, and the postmortem showed that a perforation was overlooked, death resulting from extravasation and diffuse septic peritonitis Such experiences are by no means limited to the practice of novitiates, but have occurred to men of large experience and in well equipped first class hospitals The handling of the entire length of the gastro intestinal canal in search for perforations requires time, adds to the shock of the injury and operation, and even if done by experts and with the utmost care, a perforation may escape the attention of the operator and become the sole cause of death If the surgeon adopts this plan of detecting the perforations the work should be done systematically The ileocecal region is the best landmark in beginning the search From here the small intestine is traced in an upward direction, examining loop after loop and returning the intestine as soon as examined so as to avoid extensive eventration, which adds greatly to the danger of the operation The large intestine is traced from the ileocecal region downward In one of my cases a perforation of the rectum was found low down in the pelvis and certainly would have been overlooked if I had not used the inflation test, which promptly revealed not only its existence but also its exact location If the air or gas test has been employed with a positive result before the abdomen was opened there will be no difficulty experienced in finding the first opening If the stomach was inflated directly through an elastic tube, and the test has shown the presence of a perforation, a median incision is made from the tip of the ensiform cartilage to the umbilicus and the stomach is drawn forward into the the wound If no perforation is found in the anterior wall, the insufflation is repeated, and the escaping air or gas will direct the surgeon to the perforation Through this perforation the stomach should again be inflated in search for a second and possibly a third perforation In searching for intestinal wounds by the aid of inflation, further inflation should be suspended as soon as the lowest perforat [illegible] has been found If possible [illegible] ted [illegible] the intestine should now be brought forward into the wound, and after emptying the intestine below the perforation as far as possible of its contents, including the gas or air, the bowel is compressed below the perforation by an assistant and the intestine higher up is inflated through the wound As a matter of course, a perfectly aseptic glass tube should be inserted into the rubber tube in place of the rectal tip The inflation is now carried as far as the second opening, when the first perforation is sutured, and after disinfection and emptying the intervening portion of its gas the intestine is replaced in the abdominal cavity Further inflation is now made through the second opening, and if a third one is found the second is sutured, and so on until the entire intestinal canal has been thoroughly subjected to the test By following this plan extensive eventration is rendered superfluous and the overlooking of a perforation is made impossible, likewise the objection to the test that reduction of the intestines owing to distension with gas or air is overcome if the intervening sections between the perforations are emptied of their contents before suturing the wound

SUTURING THE PERFORATIONS

The materials for suturing are an ordinary sewing needle and fine aseptic silk Catgut should be dispensed with in all intestinal work Trimming the margins of the visceral wounds is not only superfluous, but absolutely harmful, as it requires a useless expenditure of time and may become an additional source of hemorrhage The same can be said of the Czerny-Lembert suture All that is required in the treatment of a visceral wound of the stomach and intestines is to turn the margins of the wound inward and bring into apposition healthy serous surfaces by the continuous or by interrupted sero-muscular sutures, which should always be made to include fibers of Halsted's submucosa From four to six stitches to an inch will suffice If possible, wounds of the stomach should be sutured in the direction of the blood vessels, and transverse suturing of the intestine is necessary for the purpose of preventing constriction of the lumen Defects an inch and a half in length, on the convex side, can be closed in this manner without fear of causing intestinal obstruction, while much smaller defects on the mesenteric side usually necessitate a resection, not only because the vascular supply in the corresponding portion of the intestine would be inadequate, but also because a sufficiently sharp flexion might be produced at the seat of suturing to become the immediate mechanical cause of intestinal obstruction

ENTERECTOMY

Enterectomy is often indicated in cases of double perforation and in marginal wounds of the mesenteric border If in cases of multiple perforations it should become necessary to make a double enterectomy, and the intervening portion of the small intestine is not more than two or three feet in length, it is best to resect the same, as the immediate effect of the single operation will be less severe than that of a double resection with a corresponding double enterorrhaphy After resection the continuity of the intestinal canal should always be restored by a circular enterorrhaphy, using for this purpose the Czerny–Lembert suture Strips of sterile gauze are preferable to clamps in preventing extravasation during the operation The gauze strip is passed through a small buttonhole made with hemostatic forceps in the mesentery near the intestine and tied with sufficient firmness to prevent escape of intestinal contents

IRRIGATION OF THE ABDOMINAL CAVITY

This is necessary only if fecal extravasation or escape of stomach contents has taken place, an accident which, if it has not occurred before the abdomen was opened, should be carefully avoided during the manipulation of the wounded intestines Flushing the peritoneal cavity with warm sterilized water or normal salt solution not only clears it of infectious material, but acts at the same time as a stimulant to the flagging circulation The current must be sufficiently strong not only to fill the peritoneal cavity quickly, but to *flush it out*

After completion of the irrigation, the patient is placed on his side and in this position the fluid contents of the abdominal cavity are poured out The cavity is then rapidly dried with large sponges wrung out of a weak sublimate solution (1 to 10,000) or Thiersch's solution Some surgeons have practically abandoned flushing of the abdominal cavity, and rely almost exclusively on sponging in removing pus and extravasated fecal material, others are partial to leaving the physiologic solutions of salt in the cavity, paying no attention to the peritoneal toilette practiced with conscientious care by all surgeons only a few years ago

DRAINAGE

To drain or not to drain, is the all absorbing topic among surgeons whose time and attention are largely engaged in abdominal work I wish to place myself on record as being a strong advocate of drainage in all cases of abdominal surgery in which we have reason to believe that contamination of the peritoneal cavity has taken place by extravasation of contents of the gastro-intestinal canal or pus In gunshot wounds of the abdomen complicated by visceral injury, the probability that infection has occurred must not be lost sight of, and the only safe course to pursue under such circumstances is to drain when you are in doubt Cases which require irrigation should always be drained Other indications for drainage are visceral wounds of the liver and pancreas and the existence of parenchymatous hemorrhage which can not be remedied by any of the different hemostatic measures A glass drain reaching to the bottom of the pelvis, loosely packed with a strip of iodoform gauze, answers an excellent purpose Occasionally multiple drains are indicated The Mikulicz drain is to be depended upon in arresting troublesome surface oozing Drainage must be suspended at once, or gradually, with the cessation of the primary wound secretion

SUTURING OF EXTERNAL INCISION

Incisions through the median line are rapidly closed by one row of silk or silkworm gut sutures, which are placed close together and include all the tissues of the margins of the wound Incisions made in any other place are to be closed by buried catgut sutures uniting the peritoneum and muscular layer separately, and a superficial row of silkworm gut sutures including all the tissues except the peritoneum A large hygroscopic compress composed of sterile gauze and absorbent cotton, held in place by broad strips of adhesive plaster, constitutes the proper dressing The sutures are removed at the end of the second week, and the patient must not be allowed to leave the bed before the expiration of the fourth week Four weeks in bed and the wearing of a well fitting abdominal support for three to six months are the most reliable precautions against the occurrence of a post-operative ventral hernia The drainage opening should be closed with secondary sutures, inserted at the time of operation as soon as the drain is closed, otherwise a ventral hernia will be almost sure to develop in the scar at former site of the drainage tube

AFTER-TREATMENT

Absolute rest must be strictly enforced Opiates must be given in doses sufficient to quiet the peristaltic action of the intestines Stimulants must be used to counteract the effect of shock and to restore the vigor of the enfeebled peripheral circulation Absolute diet must be observed for at least forty-eight hours During this time a mixture of brandy and ice water, in small doses frequently repeated, or iced champagne, is agreeable to the patient, as it quenches thirst, relieves nausea and exerts a favorable influence upon the circulation If more active stimulation is called for to overcome shock and the effects of hemorrhage, whisky, strychnia, ether, musk, or camphor can be injected subcutaneously or by the rectum, while the peripheral circulation is restored by applying dry heat to the extremities and trunk The subcutaneous infusion of one to two pints of normal salt solution is an excellent restorative and of special therapeutic efficiency in cases where the vital forces are depressed and life is in danger from the effects of hemorrhage

Should symptoms of peritonitis set in, a brisk saline cathartic should be given at the end of forty-eight hours, as at this time the intestinal wounds will have become sufficiently united to resist the peristalsis provoked by the cathartic, while the removal of intestinal contents and the absorption of septic material from the peritoneal cavity thus attained are not only the most efficient means of averting a fatal disease, but also of placing the wounds in the most favorable condition for rapid repair Reopening of the wound and secondary flushing have done little in arresting or limiting septic peritonitis If the case progresses favorably, liquid food by the stomach can be allowed at the end of the second day, and light solid food at the end of the first week Under ordinary circumstances no effort is made to move the bowels until the end of the third or fourth day If early feeding becomes necessary in marasmic or exsanguine patients, this can be done by rectal alimentation

From the contents of the paper the following conclusions can be formulated

1 In theory and practice military surgery is equivalent in every respect to emergency practice in civil life

2 The wounded soldier is entitled to the same degree of immunity against infection as persons in civil life suffering from similar injuries

3 The fate of the wounded rests in the hands of the one who applies the first dressing

4 The first dressing should be as simple as possible, including an antiseptic powder composed of boracic acid, four parts, salicylic acid, one part, a small compress of cotton, safety pins and a piece of gauze forty inches square

5 Any attempt to disinfect a wound on the battlefield is impracticable

6 The first dressing stations and the field hospitals are the legitimate places where the work of the hospital corps and company bearers is to be revised and supplemented All formal operations must be performed in the field hospitals where the wounded can receive the full benefits of aseptic and antiseptic precautions

7 Probing for bullets on the battlefield must be absolutely prohibited

8 Elastic constriction for the arrest of hemorrhage must not be continued for more than four to six hours for fear of causing gangrene

9 The X-ray will prove a more valuable diagnostic resource than the probe in locating bullets lodged in the body

10 Gunshot wounds of the extremities must be treated upon the most conservative plan, the indications for primary amputation being limited to cases in which injury of the soft parts, vessels and nerves suspend or seriously threaten the nutrition of the limb below the seat of injury

11 Operative interference is indicated in all penetrating gunshot wounds of the skull

12 Gunshot wounds of the chest should be treated by hermetically sealing the wounds under the strictest aseptic precautions

13 Laparotomy in penetrating gunshot wounds of the abdomen is indicated in all cases where life is threatened by hemorrhage of visceral wounds and the general condition of the patient is such as to sustain the expectation that he will survive the immediate effects of the operation

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DISCUSSION ON PERFORATION PERITONITIS

Presented to the Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Colo , June 7-10 1898

By J C Wilson, Philadelphia, W W Keen, Philadelphia, J H Musser, Philadelphia, C G Stockton, Buffalo, L F Bishop, New York, H A Hare, Philadelphia, Frank Billings, Chicago, H M McConnell, Pennsylvania, H. J Herrick, Cleveland, and J W Cokenower Des Moines

J C Wilson of Philadelphia—The resources of modern surgery have greatly simplified the work of the medical clinician Forms of visceral disease that long baffled the art of medicine now yield promptly to surgical treatment In the general category of pathologic conditions thus transferred from medicine to surgery many are primary, many secondary to infectious or other processes The greater number of them do not tend to spontaneous recovery, so that a pure expectancy is without avail, while that modified expectancy which consists in the administration of drugs for the relief of symptoms is futile as to cure In point of fact symptomatic treatment, while it allays suffering, very often darkens council by deferring accurate diagnosis and too long postponing surgical intervention

In the list of visceral diseases not yielding to medical treatment and sooner or later to be transferred to the care of the surgeon are the following Empyema, which is to be treated by free drainage and in necessary cases by resection of the ribs, pericardial effusions, which if purulent, require free incision and drainage, large single abscesses of the liver, troublesome cases of cholelithiasis with persistent symptoms and empyema of the gall bladder, which Richardson of Boston has recently shown to be rela ommon and amenable to surgical treatment, cysts of the pancreas, echinococcus cysts. As concerns the kidney, extirpation of the organ may be performed when it is the seat of malignant or other growths, nephrorraphy for the relief of symptoms due to displacement, hydronephrosis and nephrolithiasis may require operation, and as certain cases of stubborn nephralgia permanent relief results from incision of the capsule. In recent times the field of the surgery of the gastro intestinal tract has been greatly extended. The establishment of gastric fistulæ in stenosis of the esophagus for purposes of alimentation, pylorectomy, the partial or total extirpation of the stomach, gastro-enterostomy and other devices by which mechanical obstructions have been relieved and life prolonged are practiced with success. The same is true with regard to operations for the relief of obstructive diseases of the intestines. Among the most brilliant and perhaps beneficent feats of surgery are the operations recently devised for the removal of the carcinomatous disease of the lower bowel. The surgical treatment of diseases of the appendix has led to a complete revision of the views held in regard to the diseases in this region and the establishment of principles which mark a new era in abdominal surgery. Scarcely less brilliant and radical, if not equally successful, is the recent surgical treatment of ulcerative lesions of the stomach and intestines, especially peptic ulcer and the perforating ulcer of enteric fever. Nor can I close this list without referring to the brilliant achievements of Macewen, Horsley, Keen and others in the management of intracranial tumor and abscess and to the operations for the destruction of the ganglion of Gasser for the relief of otherwise intractable neuritis of the trifacial, and to nerve-stretching and the excision of nerves in other forms of stubborn neuralgia, and to Quincke's spinal puncture, which though thus far barren of results as regards treatment, has proved of the greatest value in diagnosis.

These fruitful encroachments of surgery into fields long almost barrenly occupied by internal medicine constitute great permanent advances in the art of healing. In fact one may challenge contradiction in saying that the greatest achievements of modern surgery are not so much in the improvement upon old methods as in the acquisition of new regions of usefulness. They bring the surgeon and the clinician into closer contact, into more useful co operation. It is often said that the improvement in surgical technique has exerted a detrimental influence upon surgical diagnosis. If this be true a compensation has taken place, for the improvement in surgical technique has vastly increased the responsibilities of the medical clinician as regards prompt and accurate diagnosis. If the surgeon becomes more skilful and successful in new fields of operation, the physician must keep pace, nay, run ahead of him in promptness and skill in diagnosis, for it is under the latter's care that the greatest number of visceral diseases to be benefited by operation first come. In many conditions resulting from visceral disease the uncertainty of inadequate drugging now gives place to the precision of aseptic surgery, doubt and delay to the prompt employment of available resources. At any rate in operative interference in proper cases we avail ourselves of a definite procedure. It is of vital importance that practitioners should understand the limitations of drug therapy and recognize the point at which surgery alone can be helpful. It is not necessary in this company to catalogue illustrations. The compressed lung after a time undergoes changes that forever prevent its expansion, and we have already reached a period in the history of medicine where extreme permanent deformity of the chest, the result of a neglected empyema, excites trains of thought far from agreeable to those interested in the higher medical education, or where the sudden perforation of a necrotic, over-distended gall bladder and the discharge of its infected contents into the peritoneal cavity can be viewed with professional complacency.

In the greater number of visceral conditions amenable to operative interference more or less satisfactory rules of management have been formulated. The progress of knowledge in this respect has in recent years been rapid. In many, nay, in most instances, dicta are provisional, not final, but the measures by which applied science makes progress, observation, comparison, experiment, tend steadily to throw out false views and unsatisfactory methods. Clear-headed diagnosticians and pathologists and experienced surgeons are in accord. Diagnosis being determined, but little difficulty arises as to the decision in regard to operable and inoperable cases. There are, it is true, unsatisfactory results. Complete failure and disaster frequently occur, but the successes are often real, permanent and brilliant. The profession has every reason to congratulate itself upon the achievements of visceral surgery.

In one field, however, the general conditions are different. Doubt and uncertainty hamper action. Tardiness in the recognition of imminent danger, indecision and hesitancy, a fatuous reliance upon drugs that can not cure and upon traditional applications that our forefathers would, with a tithe of our pathologic knowledge, have at once and forever discarded, too often lead up from the catastrophy of disease to the final catastrophy of death.

I refer to perforation peritonitis. Curiously enough, what I am about to say has practically no bearing upon purely surgical lesions followed by extravasation of the intestinal contents and infection of the peritoneum. The surgeons have settled that question upon a very definite basis and apparently for all time. Every hospital resident knows that a gunshot wound or stab of the abdomen demands immediate surgical intervention according to rule, and that his chief must be summoned without a moment's delay. Not to operate in such cases under ordinary circumstances would be to invite criticism of the gravest kind, even to raise the question of malpractice. Nor does the gynecologist in his more limited field occupy a position less secure. Symptoms indicating the rupture of the sac in extra-uterine pregnancy are no longer treated by opium or salines, but by the swift, precise, life saving steel and suture. He is equally prompt and definite in his management of acute peritonitis occurring in consequence of pyosalpinx, a condition etiologically analogous to perforative peritonitis, and in suitable cases immediate operation is his only hopeful procedure in puerperal peritonitis.

In these conditions the proportion of successful results, that is, of lives saved, is the justification of his decision and promptness. For all these cases the surgeon and gynecologist have established for themselves satisfactory rules of diagnosis and clear principles for operation. The operable and inoperable cases are respectively recognized, with a strong leaning toward courage No *ignis fatuus* of drug therapy tempts from the firm ground of experience to the treacherous morass of a baseless hope There is no question of expectancy or delay Even the possibility of death upon the table, a disaster unduly fearful to the too conservative surgeon, receives no more than proper consideration The worst cases, if they be not altogether hopeless, are subjected to immediate and well devised treatment in accordance with rules already formulated and generally accepted, and the limitations of diagnosis are subordinated to the resources of an almost perfect technique Thus in obscure cases exploratory incision is not only justifiable, it is imperative

It remains for the medical cases, if they may be so designated, still to be enveloped in doubt and uncertainty still to suffer the fatal risks of tardy diagnosis and a paltering indecision as to treatment By medical cases in this connection I mean those coming primarily under the care of the medical practitioner as such, in contradistinction to the surgeon and gynecologist, or what amounts to the same thing, coming under that of the general practitioner when in his relation to his patient he is serving in the capacity of the worker in internal medicine

Few of us adequately realize how large this group of cases is Acute peritonitis, the result of infection by way of perforation of the wall of the alimentary canal or of other hollow viscus, rupture of abscess or by some other analogous process, is very common indeed It is perhaps as much more common than ordinary traumatic peritonitis, as the visceral diseases capable of producing it are more common than homicide

Aside from the traumatic and gynecologic cases the list of diseases in which acute general peritonitis may arise is most extensive

1 In the alimentary canal, *a*, peptic ulcer, gastric and duodenal, *b*, enteric fever, *c*, appendicitis

2 Other hollow viscera the contents of which may be infected, *a*, the gall bladder, *b*, the pelvis of the kidney, *c*, the urinary bladder

3 Rupture of abscesses, *a*, purulent pleurisy *b*, subphrenic abscess, *c*, hepatic abscess *d*, abscess of the pancreas, *e*, appendicular abscess, and *f*, other pus collections in regions in relation with the peritoneum

4 Necrotic processes involving abdominal viscera, *a*, internal strangulation, *b*, intussusception, *c*, volvulus, *d*, embolism and thrombosis of the mesenteric vessels, *e*, gangrene of the pancreas or of the spleen, *f*, displaced kidney or spleen with twisted pedicle, *g*, acute hemorrhagic pancreatitis, *h*, fat necrosis

In some of these conditions, as for example empyema, hepatic abscess, peptic ulcer with symptoms of appendicitis, the previous underlying disease can be readily determined and the patient has as a rule been under observation prior to the accident which causes peritonitis In others, such as walking enteric fever or peptic ulcer without symptoms, the patient, while out of health, is able to be about and to attend in some manner to his ordinary duties up to the time of the accident This is also true in some cases of conditions in which acute peritonitis supervenes upon or is associated with more or less extensive necrotic processes, as strangulation, volvulus and acute pancreatitis

In cases in which the previous condition is known the sudden occurrence of the symptoms of peritonitis bears a clear pathologic relationship to processes of the antecedent condition and a reasonably accurate diagnosis of the immediate cause of the inflammation of the peritoneum may be reached Under such circumstances there are intelligible data for the guidance of the surgeon as to the site of the original lesion and the nature of the difficulties to be encountered When, however, the symptoms of an acute general peritonitis arise in an individual not previously regarding himself as ill or who has not been under observation, the uncertainties of the case very often preclude diagnosis and the surgical procedure must be of the nature of an exploratory operation But the distinction between the cases in which the immediate causal diagnosis can be made and those in which it can not be made is a matter of theory rather than of practice It is the acute fulminant peritonitis that requires immediate consideration Here is the question of diagnosis If the diagnosis be correct the prognosis in the vast majority of instances without operation is fatal Even under the most favorable conditions the percentage of recoveries will be comparatively low and this is just the point at issue The medical cases must be placed upon the same basis as the surgical or traumatic and the gynecologic cases In a large proportion of them the conditions for operation are more unfavorable, it is true, but a minority are now saved, and with the same promptness in operating and the same general recognition of the propriety of immediate operation this minority will be greatly increased

"In the early stages when operative interference is advisable and not without hope, the symptoms may be grouped as follows

"1 Pain general, becoming local, or local, becoming general, according to cause

"2 Tenderness, general, becoming local, or local, becoming general

"3 Rigidity of the abdominal muscles

"4 Vomiting, green *Exceptionally absent*

"5 Rise of pulse and temperature *Exceptionally also absent*

"6 Shock, varying in depth

"7 Diminished peristalsis

[I have added the words in italic J C W]

"In fully developed peritonitis, in which the wisdom of interference is questionable, the symptoms are

"1 Pain lessened or absent

"2 Tenderness general

"3 Distention excessive, replacing rigidity

"4 Vomiting excessive, green or fecal

"5 Obstipation, peristaltic movements not heard

"6 Rapid and feeble pulse

"7 High or low temperature

"8 Lividity of abdominal skin, cold extremities

"9 Peritoneal facies

"10 Mind clear

"In hopeless cases the above symptoms are increased with collapse, and the patient is moribund "[1]

In hospital practice almost all the cases present at the time of admission the symptoms of fully developed peritonitis and most of them are already in a condition which precludes operation They come in to die, many of them are admitted moribund

The importance of the condition of the abdomen can not be over-estimated The early rigidi is a symptom of the utmost importance My experience leads me to fear that its value is not sufficiently recognized by practitioners To wait for distention in the diagnosis of general peritonitis is in the larger proportion of the cases to postpone operation until too late

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[1] Richardson and Cobb F [illegible] ican [illegible]
ii p 886

A well developed man, an athlete, 26 years old, complained of sudden pain in the epigastrium after exercising on the horizontal bar in the evening The pain increased I saw him the next morning, when the belly was flat, board-like in its rigidity, exquisitely tender and the seat of general pain There was no rise in temperature Operation was advised and additional counsel sought Concurrence in my views as to the existence of acute peritonitis failed, operation was not endorsed, purgatives were administered Ten hours later the patient died Upon postmortem examination there was found a clean-cut circular perforating ulcer upon the anterior wall of the *duodenum*, general infective peritonitis, no other lesions

A proportion of the cases are inoperable from the onset Collapse occurs from which the patient does not rally

A middle aged Italian in my service at the Pennsylvania Hospital in October, 1897, died within four hours of the first appearance of symptoms indicating perforation of the gut, at about the twentieth day of an attack of enteric fever Perforation was found at the autopsy

In a recent series of six cases of perforating ulcer of the stomach reported by different observers in which operation was performed within a few hours after the development of symptoms indicating perforation, five recovered [2]

In Keen's recently published "Surgical Complications and Sequels of Typhoid Fever" there is a table of eighty-three well authenticated cases of operation for intestinal perforation in enteric fever These cases were collected and carefully analyzed by Westcott They give as a general result sixteen recoveries or 19 36 per cent of cures and 80 64 per cent of deaths When this, as the author points out, is contrasted with Murchison's unchallenged figures of 90 to 95 deaths after perforation without operation we may well take courage for the future

As regards the time of operation this table shows the following remarkable and most instructive facts "In the cases operated on within twelve hours, the percentage of recoveries was 26 7 per cent Between twelve and twenty-four hours, 30 per cent After twenty-four hours, the mortality was total, except one after twenty-six hours (No 64) and the two that recovered between two and three days (Nos 25 and 28)" And upon them Professor Keen makes this comment "The last two cases we must consider as exceptional and not impairing the rule that if the operation is not done within about twenty-four hours after the perforation there is practically no hope of a recovery"

The following words of Keen with reference to operation in typhoid perforations are applicable to perforation peritonitis in general "But, after all, the appeal must be to the facts in the case This is the final arbiter When once physicians are not only on the alert to observe the symptoms of perforation, but when the knowledge that perforation of the bowel can be remedied by surgical means has permeated the profession, so that the instant that perforation takes place the surgeon will be called upon, and, if the case be suitable, will operate, we shall find unquestionably a much larger percentage of cures than have thus far been reported"

In conclusion I desire to formulate for discussion the following propositions

As regards operation in acute general peritonitis due to perforation and analogous conditions,

1 A definite causal or local diagnosis of the lesions can be made in comparatively few instances

2 The diagnosis of acute general fulminant peritonitis is of itself sufficient to justify operative interference in proper cases

3 The earlier the operation the greater the prospect of success After twenty four hours, especially if great distention of the abdomen has shown itself, operation is not likely to be followed by recovery

4 A small proportion of the cases are manifestly *hopeless from the onset*

5 Where the patient is not obviously past hope the fear of death upon the table should not deter the surgeon from operating

W W Keen of Philadelphia—I have been in the Section on Surgery and Anatomy, but left there in order that I might be present in the Section on Internal Medicine, and I have been rewarded by so doing

The catalogue of diseases which are shown as causing perforation peritonitis is sufficient to challenge our attention But little time passes in which we are not called to see a case of perforation peritonitis from some cause The urgency of these cases warrants a careful consideration of the whole subject of the treatment of perforation peritonitis, and also warrants the conclusions Dr Wilson had reached and with which I am in full accord

However, I do not agree with him as regards the symptoms which he has mentioned as being of value The pulse and temperature in perforation peritonitis are of very unequal value While, as a general rule, I believe the temperature to be the best index of a septic condition, yet it is actually of little weight or value I remember a case of suppurative peritonitis in which the postmortem confirmed the diagnosis, where the temperature was at no time above 100 degrees F In many cases the temperature is not above 99 degrees, in these cases the temperature is evidently of little value However, if the temperature runs high or falls low, I respect it I was glad to see that Dr Wilson mentioned muscular rigidity of the abdominal wall as occurring in appendicitis, especially in perforation appendicitis

Dr Wilson, in quoting statistics, called especial attention to those operated upon within the first twenty-four hours, this is a matter of extreme importance If we wait twenty-four hours after perforation we can assign the patient to the grave Logic, reinforced by statistics, confirms the statement that, in typhoid fever perforation means a *mortality of* 95 per cent Cases operated upon within twenty-four hours show that we can save nearly 30 per cent Drs Weir and Tincker collected seventy-eight cases, operated upon during sixteen years, which showed a mortality of 30 per cent

In cases of appendicitis I am quite sure that this Section and the profession in general will agree that if perforation *takes place*, especially *if it occurs without* adhesions and localized abscess, operation offers practically the only hope, and the earlier it is done the better As I do not think this Section objects to surgical details I will say that Wells gives a table of ovariotomies in which the incisions were two and three inches in length, but I do not think that as far as the mortality is concerned it makes any difference if they are two or six inches long In cases of appendicitis where perforation and general suppurative peritonitis has occurred, I know that the safety of the patient depends upon the thorough cleaning of the abdominal cavity

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[2] American Year Book of Medicine and Surgery, 1898, p 182

I am quite sure the Section has taken up an important topic for discussion, one that touches the practical physician and surgeon, and we can unite and go arm in arm in the march for life and humanity

Dr J H MUSSER of Philadelphia—The subject has been so thoroughly and exhaustively considered by Dr Wilson, supplemented by remarks by Dr Keen, that I will not say much further except to speak of my personal experience in connection with this subject I want to speak of perforation peritonitis arising from other diseases than typhoid fever I am satisfied that it is very essential and important that we should early recognize the cause, and, if possible, the antecedent cause of perforation Local rigidity, localized tenderness, with pain probably at first, followed by symptoms of shock, and especially the occurrence of vomiting, with increase of pulse rate, but not necessarily any change in temperature, all are important symptoms of this condition If possible we should anticipate perforation Pain continuing for twelve or twenty-four hours is of great significance and is one of great dread to me There is no other symptom which I dread so much as this one of pain, when it does occur I am very apprehensive If these cases be examined after death, we find a perforation that is preceded by a localized inflammation, a considerable amount of lymph covers the intestines in this region, and they are matted together, and in order to get at the point of perforation, one must separate these adhesions The phenomena preceding this condition, consists of pain, the degree of which depends upon the intelligence of the patient at that time, a patient with typhoid fever is not susceptible to pain or else their state of mind in such that they do not complain of pain unless their attention is called to it Pain, rigidity and localized tenderness is important, as Dr Wilson has pointed out Pain, localized tenderness, with an antecedent history of slight rigidity, followed by symptoms of shock, are the symptoms that should direct attention to perforation peritonitis The occurrence of symptoms of shock, hemorrhage being excluded, are the ones that we must rely upon in making a diagnosis of perforation peritonitis I am in accord with the opinion of the surgeon who makes an exploratory incision to make his diagnosis, it is certainly murder to wait Cases occur from time to time in all our experiences, which are obscure, and which lead us into difficulty when it is not our fault that such cases are not distinctly recognized and promptly treated I can no better illustrate what I mean than relate the history of a young girl, 14 years of age, who was seen in the first week of typhoid fever, the diagnosis seemed to be undoubted, although it is true the reaction did not verify the diagnosis In the course of the disease, the temperature, the mental and intestinal symptoms all pointed to the fact that she had typhoid fever At the end of the first week she complained of some pain in the abdomen, there was no rigidity and she was without tympany The day following, the pain was marked and severe in the back, and in order to exclude any pelvic disease—she had a discharge from the vagina—an examination was made and a large mass was found in the pelvis I was somewhat mortified, for I thought I had been treating a case of pelvic abscess for typhoid fever The surgeon that was with me agreed that such was the case Evidences of general peritonitis being excluded we decided to operate The patient died, and the autopsy showed that she did have typhoid fever, with perforation and peritonitis There was also present a pelvic tumor

Dr STOCKTON of Buffalo, N Y—The question has been so ably presented by Dr Wilson and so thoroughly discussed by members of the Section, that little is left to be said Yet there are a few details that come up for discussion In the first place it is a matter of great importance to discover whether the perforation has been one involving a hollow viscus, containing air like the stomach or intestines, or whether the gall or the urinary bladder If we have a perforation from an abscess forming within the peritoneal cavity, the process is a more rapid one than that which occurs from an abscess forming in a solid organ and the symptoms are not so distinctive The symptoms differ materially in different cases Yet in my mind it is far from clear just when perforation is going to occur in a slow developing case There is not much difficulty in the diagnosis and early recognition of perforation from a peptic ulcer, yet the symptoms sometimes mislead a very careful man One case I will relate illustrates what I mean A colored man was picked up who was in collapse and in intense pain This pain was in the region of the bladder The man was sent to the hospital, and we supposed that he was suffering from rupture of the bladder For some reason an operation was not performed The man survived nearly a week and then died The autopsy showed perforation of the stomach There was a round ulcer, which had opened into the abdominal cavity discharging the gastric contents there, yet after this the man survived several days He had urinary pain and tenderness over the bladder, but no vomiting To my mind the point that should stand out as the best guide to perforation of the stomach, intestines, gall-bladder or the urinary bladder is the suddenness of the onset of the symptoms It is true, as Dr Musser has said, that perforation may be preceded by slow inflammatory process preceding tympanites before symptoms of shock occur There are symptoms which can not be referred to any particular part of the abdominal cavity The sudden onset of pain with rigidity of muscles and a condition approaching shock makes out a case of perforating ulcer of the stomach On the other hand, a man has often to deal with cases in which there is tenderness and rigidity of the muscles and pain, and the case goes on for several days with increasing symptoms and tympanites, and it is not easy to tell when perforation occurs It is interesting to note the frequency with which pain is discovered remote from the time at which perforation occurs My views of the symptoms must not be considered different from those already expressed I should like, however, to state that it often happens that there is an absence of the symptoms one most expects, and one is so often surprised at the postmortem to find that such is the case I have been so surprised time and again These cases do occur, and it is for this reason that attention should be called to details and symptomatology of peritonitis Surgery of this field should be studied more closely A fact that is indisputable is that perforation peritonitis is followed by certain death without operative interference The difficulty arises, I think, when we have to determine whether we have perforation in certain class of cases

Dr BISHOP, Pennsylvania—A point of great importance was not emphasized I refer to the use of opium Opium obscures diagnosis and gives false confidence to the laws of life I would like to call attention to the fact that relief of pain can be obtained by the use of ice bags This winter a physician consulted me who was suffering from peritonitis That man never stopped speaking of the comfort he got from the use of rubber bags filled with cracked ice, which was laid upon the abdomen constantly for a number of days It is of great importance to know that pain can be relieved by ice and so we can avoid the use of opium

Dr HARE of Philadelphia—The character of the pain has not been sufficiently emphasized I confess that I have not had the experience in cases of perforation in typhoid fever that Dr Keen has had The surgeons get the idea that these cases occur quite frequently in the hands of the medical practitioner—much more often than they do occur Statistics show that they do not occur with as great a frequency as one would imagine from Dr Keen's remarks In the few cases that I have seen are two classes One case I recall was that of a student who was lying quietly in bed who was suddenly seized with pain, he screamed in agony and died two or three hours after the onset of the pain Another case I recall was one in which the pain commenced gradually and at the end of twelve hours began to be insupportable To pursue these cases one should have a postmortem In the first case there was present a perforating ulcer of the bowel In the other case owing to an ulcerative process going on, and an inflammatory action there, the intestines were glued together, etc, and the general symptoms of peritonitis developed It is a mistake to believe that a perforation in typhoid fever must be accompanied by violent pain, or slowly oncoming pain Last summer I saw a case that had an attack of abdominal pain as violent as that of peritonitis, it was apparently one of wind colic and the passing of fecal matter relieved the pain

In these cases I do not believe there is a more anxious surgeon than I I believe in having a surgeon to operate who uses his judgment and wisdom

Dr F BILLINGS of Chicago—I thank Dr Wilson for the clear and general outline he has given us The enumeration of the symptoms he has given us no one can deny as being accurate Of course there are exceptions to the general symptoms as laid down by Dr Wilson, and no one individual is present who could not recite some case where one or all the symptoms were present

I want to emphasize some of the things already said, and especially the points mentioned in regard to the antecedent history of these cases, which I consider so important—quite as important, or more so, than the symptoms already enumerated One must remember that it is the exceptional cases which are of the greatest importance to us, and not so much those that are classic in form Pain is enumerated as an important symptom, yet pain may exist up to the time of perforation and then suddenly cease, all of us have seen this happen I have seen cases of perforation in appendicitis in which the patient seemed to be in a perfectly normal condition so far as pulse and temperature was concerned, there were no physical signs to show that there was anything the matter, the pulse was normal, the abdomen was flaccid, with no points of tenderness But pain suddenly coming on, operation was advised and done and there was found a rupture of the appendix

There is another thing about which I wish to speak, and that is in regard to rigidity of muscles, which is always present and always may be found

It is the exceptional points which appeal to an individual But the lines as laid down by Dr Wilson are no doubt true in general terms

H M MCCONNELL of Pennsylvania—There are two important points of diagnostic interest that I should like to mention, absence of elevation of temperature and rapidity of pulse rate In cases that I have seen in consultation I have had the greatest trouble to impress upon the attending physician that the absence of temperature indicates that there is no peritonitis present I could not imagine a case of peritonitis where the pulse remained at the normal point for any length of time I can not conceive any case of perforation where the pulse is normal

Dr H J HERRICK of Cleveland—I recognize that the discussion is upon suppurative peritonitis, the conclusions are well taken and the symptoms well given, but this question has not been entered upon, it seems to me

Dr COKENOWER of Des Moines, Iowa—I wish to emphasize a point in regard to the use of opium, this drug relieves the pain and it is then almost impossible to get the consent of the patient for operation

Dr WILSON of Philadelphia—I wish to emphasize one or two points which, it seems to me, has been overlooked The purpose of my paper was to use such influence as I had with the profession to urge upon them the necessity of referring cases of acute peritonitis, arising suddenly, to the surgeon, and the surgeon should treat these cases The medical cases should be recognized and managed the same as surgical cases are recognized and managed These are not cases for the medical practitioner In a large hospital in a large city I asked the medical director certain questions, he said that among 3000 in-door cases there were a great many cases of acute peritonitis that were brought into the hospital who died within twelve hours Many of them upon admission were drugged with opium, either to relieve their pain or uncontrollable vomiting I am pleading for the lives of people, under these circumstances The medical practitioner, outside the hospital, who see these cases first should recognize them and not drug them with opium, or else they should call to their aid an experienced and skilled surgeon They then will be looked upon, recognized and managed as surgical cases

In regard to what has been said in the discussion, I wish to state that we all know that perforation peritonitis comes on in various ways, it may come on like shock There are cases in which, owing to the mechanical condition present, there is a little rent, through which follows a local infection This gives rise to an adhesive peritonitis which is local Other symptoms are produced later

I am pleading for the lives of those that die in the first three, four or five days, many of which might be saved

I must say a word on another point Every now and then there occurs a case in which the symptoms are not classical and not well defined The case shows no pain—none at all in the right iliac region Presently comes on tympany and the patient appears to be ill and the case looks like peritonitis Cases of this kind of acute peritonitis are not general I have met with several cases like this Eight or nine years ago, a girl had an attack, Dr Keen and I watched the case thirty-six hours, she got well without operation I have seen other cases, two years ago, and again quite recently—within six weeks—a woman presenting the same symptoms The point is this These cases are not different from cases of fulminating explosive peritonitis in the hands of the medical man and they are not to be drugged with opium

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SOME PATHOLOGIC AND CLINICAL PHASES OF GALL-STONES

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Among the most common diseases of the abdominal cavity may be mentioned those of the biliary ducts, and of this class cholelithiasis is the most frequent In fact, so common is this condition that in several thousand postmortems no less than 7 per cent of cases with gall stones were found, and it is a curious conclusion to which some clinicians have arrived, that as these cases did not present any evidence of the presence of the stones, it proves that the majority of those suffering with gall stones will get well if left alone Many cases of gall-stones present no direct testimony of their presence, while others give evidence in the most emphatic symptomatic language

The causation of the formation of gall-stones has been a theme for discussion for many years by some of the ablest clinicians A few years ago in the direct causes were enumerated stagnation of bile, inspissation of bile, advanced age, sedentary habits, tight lacing and abdominal tumors, all in a measure acting in the same way, that is, interfering with the free circulation of the bile

The bile is a watery secretion containing 1 to 3 per cent of solids, with bile pigment and bile acids as normal ingredients It would seem in the young (under 20) the disease is rare, and that the age of 40 furnishes the largest number of cases until the age of 60 is passed, then the disease becomes relatively more frequent, and after this age there are fewer cases presenting symptoms pointing to the presence of stones (colic, etc) Old people are more frequently affected with malignant diseases in the pyloric and duodenal segments of the alimentary canal, and modern pathologists recognize in the presence of gall-stones a factor in the production of these neoplasms, hence they are treated for the results and not the original cause

Most of my cases have been in males Most writers place the proportion at females five to males one The cause especially present in females being tight lacing, laxity of abdominal walls, child-bearing—90 out of 115 cases in females had borne children

Lunatics, from their sedentary habits, are said to be prone to gall-stones I do not believe that idleness alone ever produced them, if so, the disease would be more prevalent, heredity is not a cause, nor diet alone unless of a character to induce a gastro-duodenitis The normal ingredients of the bile entering into the formation of gall stones are bilirubin, biliary salts and cholesterin in abnormal quantities, often found in the gall bladder A pure cholesterin stone is rare and usually has some other ingredient as the nucleus Those found in the hepatic ducts are, as a rule, the bilirubin calcium stones, while those in the gall-bladder have bilirubin calcium as a nucleus with cholesterin on this nucleus, the original focus having its origin in the hepatic duct and subsequently finding its way into the gall bladder The little hard, round, solitary stones found in the ductus choledochus are, as a rule, of bilirubin-calcium Most stones are found in the gall-bladder, for it is here that the conditions most favorable for their formation and retention exist

The old writers maintained that these stones were the result either of an overproduction of cholesterin by the liver or to a want of its proper solvent in the bile, thus permitting the substance to deposit and form stones Later authors say that cholesterin is a result of disintegration of the epithelium of the mucous membrane and glands of the gall-bladder and larger bile ducts Cholesterin is a substance of wide distribution over the body It is found in various solids and fluids, in the expectoration of consumptives, in pus especially, in locations where there exists a mucous membrane In bile from the liver 07 parts per 1000 of cholesterin is found, while the analysis from bile in the gall-bladder shows 3 to 11 parts per 1000 Occasionally pure masses of cholesterin are found in the gall-bladder The preponderance of the evidence is against the old theory that these stones are formed by the bile failing to hold in solution the cholesterin, which was formerly held to be an abundant normal constituent of the bile It would appear that cholesterin is formed in the gall-bladder and is in the bile as an emulsion Bilirubin calcium is an insoluble compound, the outgrowth of of the union of bilirubin and the lime salts The bile salts sodium-glycocholate and taurocholate prevents this union naturally, even in the presence of a moderate excess of lime, but if an abundance of lime is added a precipitate of bilirubin-calcium results

If to a weak ammoniacal solution of bilirubin there is added a few drops of lime water, an immediate precipitate of bilirubin-calcium takes place If now to this same solution 2½ per cent of glycocholate of soda be added it takes five times the quantity of lime water to cause any precipitate at all This experiment has an important bearing in a prophylactic way

Albumin favors the precipitation of bilirubin-calcium The outpouring of a catarrhal change in a mucous membrane is largely albuminous A gastro-duodenitis may lead to the stagnation of bile and thus act as one of the prime factors in the precipitation of this fluid, but it is not alone sufficient, for as long as no septic micro-organisms are present the disposition of the bile is to hold the stone producing ingredients suspended or in solution, The bacillus coli communis is often the cause of catarrhal changes in the biliary passages Naunyn found that if he injected the bacillus into the gall-bladder it excited no inflammation, but if the common duct was previously ligated the most intense cholecystitis was excited

An infection of the gall-bladder [illegible] an increase in the amount of cholesterin by destruction of and disintegration of the epithelial cells, and to a precipitation of bilirubin-calcium The latter acts as a nucleus for most stones The attacks of cholangitis may be of a transient character and yet leave the nuclei of many stones in the gall-bladder These may or may not give rise to any symptoms directly attributable to their presence, yet the presence of stones in the gall-bladder may produce an influence on the general health of the individual that may become of a serious character

Early diagnosis in many cases means prophylaxis Obstructive jaundice, hepatic colic and ptomain poisoning are usually late manifestations If in 10 per cent of all postmortems there are found gall stones that were not suspected during life, owing to absence of symptoms of a severe nature, I am sure a close inquiry in some of these cases would have elicited a history of "*bilious attacks*," *recurring* headaches, a sense of uneasiness in the gall-bladder region, loss of weight, etc If no infection exists when stones are in the gall-bladder their presence does not excite much pain, but when a stone becomes lodged in the common or even in the cystic duct then a paroxysm known as hepatic colic will supervene Probably only two-thirds of patients with gall-stones ever have severe colic symptoms, but it is not the pain that kills *in these instances*

Spasmodic closures of the pylorus may be mistaken for hepatic colic, but with a recognition of the accompanying gastric dilatation and by hyperacidity in these cases, a diagnosis can usually be made It is not necessary that suppuration exist in order to have rigors and fever, the so-called "hepatic intermittents" of Osler These irregular chills are due to the absorption of ptomains When the stones are located in the common duct near its entrance into the duodenum absorption is especially liable to take place, for it is at this point that the lymphatics abound most plentifully A small round stone will frequently become lodged just at this point and make for itself a bed in the mucous membrane by destroying the epithelium, thereby opening the avenues of lymphatic absorption A stone in this location may remain for an indefinite period giving rise to symptoms of a mild or severe character, depending on its disposition to become wedged into the duct and the completeness of this closure These ball-valve stones are the most persistent in duration, the greatest in danger and the most difficult to cope with surgically A stone lodged at this point and remaining for months or years is dangerous from the persistence of its health undermining properties, in a mild and gradual way (chronic sepsis and persistent mild cholemia) and from the remote danger of a cancerous development at the site of *constant irritation* Where the obstruction is complete the ducts and gall-bladder become greatly distended with the bile and other normal and abnormal fluids The lymphatics take up the coloring matter distribute it through the blood channels to the whole mucous and cutaneous surfaces and thus jaundice is produced A remarkable change takes place in the gall bladder in some of these cases in which the common duct is occluded, that is, the bladder becomes contracted instead of dilated, this is in part explained by the action of Heister's valve and in part to the often present pericholangitis A persistent and complete closure of the ductus communis choledochus *frequently* leads to cirrhosis of the liver

The choledochus stones are found in about 10 to 15 per cent of all cases presenting marked symptoms Thornton (1848) was the first to remove a stone from the common duct, since which time the operation has been performed by many surgeons all over the world Within the last five years the histories of cases have been carefully studied for the purpose of making early and correct diagnoses, this has led to an analysis of the symptoms, making it possible to differentiate stones in the gall-bladder from those in the common duct The specific gravity of gall-stones is very light, 1020 to 1030, while that of bile is 1030 A ball-valve stone may float about in a dilated duct, changing its position easily This in part explains the sudden cessation of the pain in some cases of colic, even though the stone does not escape into the duodenum A change in the position of the body may cause a dislodgement of a light stone, provided the stone is not partially imbedded in the surrounding structures

The function of the gall-bladder is not that of a reservoir for the bile, as it holds but an ounce and a half, while the twenty-four hours' secretion is about forty ounces I believe the gall-bladder has some especial function Most likely a digestive ferment is manufactured here in the quiescent stage of the liver.

The gall-bladder has been removed (Von Laugenbuck, 1802) successfully several times, but so far no scientific clinical data is available bearing on the progress of these cases, post operative Upon a proper diagnosis depends the correct management of these cases Were the obscure symptoms presented by many chronic invalids interpreted correctly a goodly number of the cases would prove to be cholelithiasis Many a swarthy (icteric tinge) patient with loss of weight and, interference with digestion, and proper assimilation will, I believe, be found to have gall stones stored away in the bile passages, and that their presence has interfered with the formation of some especial digestive agent, or has given rise to the development of noxious substances which have gradually undermined the health

While jaundice is an indication for surgical interference, it is at the same time quite a serious bar to operation, as these chronic cholemic patients are, almost without exception, bleeders and they stand surgery and anesthetics very badly All arguments favor early surgery where symptoms point to its necessity at all

The treatment of these cases depends upon the symptoms An ordinary attack of hepatic colic, due to the passage of a small stone will, in all probability, terminate favorably within a few hours or days, and if the stone was the only one present and succeeded in finding its way into the duodenum the case will require no farther care If the case is one with well marked ball-valve symptoms, the stone will probably *remain in* the duct, giving rise to painful and dangerous symptoms until its surgical removal is effected If the stones are in the gall-bladder and are giving rise to infection or suppuration in this viscus then an operation should be early resorted to It is rare that pain alone, as a persistent symptom, forms an operative indication, yet frequent exacerbations of pain with the usual attendant symptoms of jaundice may demand operation The mortality in skilled hands is very low The surgery is difficult and requires careful anatomic discrimination, a familiarity with the pathology and exact surgical acumen If these essential prerequisites are not possessed by the operator, his work will show imperfect results and high mortality.

DEDUCTIONS

1. Cholelithiasis is of frequent occurrence and usually gives rise to symptoms either severe or obscure.
2. Cholesterin as a gall-stone producing agent must be present in an abnormal quantity.
3. Cholesterin is in a great measure a product resulting from the destruction and disintegration of the epithelium of the biliary ducts and gall-bladder.
4. Bilirubin calcium, an insoluble compound formed by the union of bilirubin and the lime salts, forms the nucleus of most of the stones formed in the gall-bladder.
5. Jaundice, ptomain poisoning and suppuration are late symptoms of cholelithiasis.
6. Dyspeptic symptoms, swarthy skin, uneasiness in the region of the gall-bladder (congestion of liver) and loss of weight are some of the remote and local symptoms of the presence of gall-stones.
7. Inflammatory diseases of the duodenum and bile passages are the most direct causative factors in the production of gall stones.
8. The surgery of these cases is especially difficult and the inexperienced should not undertake it.
9. A ball valve stone usually continues to give rise to symptoms until removed by surgical means.
10. Stones in the gall-bladder, producing septic symptoms, should be removed.

A NOTE ON THE TREATMENT OF CARCINOMA OF THE UTERUS

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The improvement in the condition of several cases of uterine cancer under the treatment herein described seems to me worthy of record. The idea of curing cancer by means of remedial agents has never found lodgment in my mind. Many patients have inoperable cancers, many others can not pay for the surgical operations in vogue for cancer today, and remain at home and suffer horribly till death comes to them as a welcome visitor. To such people, the treatment by the carbid of calcium will be a blessing. In two cases, the first ones treated by this agent, there was such a complete abolition of the trilogy of symptoms so characteristic of uterine cancer, viz. discharge, odor and hemorrhage, one could easily be tempted to call them cures, did I not feel that I ought to wait at least two years for a possible return of the disease *locally or remotely*.

This dreadful disease has until very recently had but one termination, viz., the death of the patient. I know of no more loathsome malady in its last stages. The odor of it fills the sick room *ad nauseam*. I have known it to fill the entire house for weeks and months before death finally came. It so saturates a doctor's clothes that he can smell and fairly taste it the balance of the day. I know of no disease that emits a more repellant and disgusting offense to human nostrils.

In considering this subject, it is thought best to pass in review the investigations and opinions of the present day on the pathology of *cancer*. After that will follow the consideration of the *carbid of calcium* and *acetylene* gas, the remedial agent used. Lastly, the cases treated will be presented.

An experience of seventeen months is too brief from which to draw lasting conclusions. Reports by many different observers from different countries are necessary to furnish results which shall remand the use of carbid of calcium to its proper place. It is desired to offer this initial paper as a contribution to the treatment of one of the most fatal diseases of the human race. Originality in discovering the application of this agent in its use herein described is distinctly disclaimed.

Recently vaginal hysterectomy has afforded one means of dealing curatively with this fell disease provided the operation be performed early enough. We never know in any case whether the operation be performed early enough to forestall death. I have done vaginal hysterectomy for uterine cancer when it occupied a space not larger than my thumb nail and have seen the patient die in less than thirteen months from a recurrence of the disease. Again, I have removed a uterus whose cervix had been wholly eaten away by carcinoma and seen the patient alive and well five years after the operation. I therefore conclude that vaginal hysterectomy can not be depended upon to bring lasting results in all cases. Indeed, I have seen so many cases of recurrence after total extirpation that I have long been searching for some means that promises better results. I have used many much praised remedies, and have turned away from them because of their failure to secure curative results. I used Chian turpentine faithfully, which I had had imported from London so as to be certain that I was using the article so much vaunted by Clay of Manchester, several years ago. It was a complete disappointment. Alcohol, greatly praised recently, used in parenchymatous hypodermic injections, has suffered the same fate. Arsenite of copper has likewise failed in curing cancer. Other remedies have been used that have had many claims made in their favor, but up to this date, not one stands the test of experience. If any one agent were reliable in curing cancer, we would hear of no other means of treating it. Such a remedy the medical profession is looking for.

Pathology of cancer.—The cause of cancer was well known a few years ago, it was thought. Now, it is acknowledged to be one of the most thoroughly unknown subjects in the whole range of pathology. As late as 1890, the following was written by Pozzi in his monumental work entitled "Medical and Surgical Gynecology" (Vol. I, p. 333). "The great predisposition of the cervix to the development of cancer has ben noticed by all observers. Is there anything in general anatomy which will explain the fact? Cohnheim has supposed that the embryonal cells which have not been absorbed in the function of the organs, and which are found scattered through the connective tissue or gathered in islands at certain points, may be the matrix tissue of carcinoma. These tumors are found most frequently in the nests of embryonal cells which define the natural orifices of the body, where there is more or less irregular *involution of the blastodermic layers, the cervix* uteri, developed relatively late, at the expense of the Müllerian ducts, belongs to this class of congenitally vulnerable points. The presence of two varieties of epithelium at the external os and [illegible] plastic polymorphism which [illegible] factor in their production. T[illegible] plained, however, the exciting cause of the neoplasm The repeated afflux upon which Cohnheim lays so much stress does not account for it "

This elaborate explanation of cancer only serves to show that our knowledge of its etiology at that time was absolutely negative Ever since bacteriology came into our work, investigators have been busy in attempts at solving unknown problems in etiology Within a few years it has revolutionized surgical pathology It has illuminated many places that were formerly as dark as Erebus The causes of many of the commonest diseases have been made as clear as the noonday sun Many diseases are still baffling our bacteriologic researches One of the most important of these unsolved etiologic problems is cancer Occasionally, a glimmer of light seems to come, promising a full illumination of the subject Scheuerlin thought his investigations cleared up the subject In 1886, he isolated from cancers of the mamma a bacillus which, he asserted, is the active agent in the causation of cancer It grows rapidly on blood serum, agar and gelatin, slowest on the last, and forms a red deposit on potato Its spores stain only by the Ehrlich method in use for the tubercle bacillus, but the bacillus itself stains readily by ordinary means He injected pure cultures into the mammary glands of dogs with the effect of inducing a hard tumor which, he states, is epithelial in its character However, Koch and other Berlin bacteriologists are inclined to doubt its having to do with cancer, and look upon the morbid condition of the mamma set up as being simply a mastitis ("Text-Book of Pathology," D J Hamilton, Vol I, p 407)

Very many forms of bacteria have been found in the microscopic examinations of cancers Their presence is accidental They are not causative That they are not the essential etiologic factor of cancer is shown by the fact that, when inoculated into healthy tissue they do not produce cancer Other pathogenic bacteria whose history and disease producing power have been verified repeatedly, will produce the diseases from which they are taken To illustrate Tuberculous bacilli introduced into healthy animals will produce tuberculous animals, which in turn will supply new bacilli that can produce tuberculosis in other animals Thus many successive animals can be successfully rendered tuberculous from one original inoculation, proving incontestably that the bacteria of disease produce their kind Many other diseases can be produced at will Tuberculosis is not the only one The horrible malignity of cancer has made it an object of especial interest to bacteriologists, for, if we can isolate and demonstrate the especial bacterium of this dread disease, we stand in an infinitely better position to find its cure

In 1896 Kahane, who was the first to describe the presence of blastomycetes in malignant tumors in his last communication (*Centralbl f Allg Path und Pathol Anat*, June 15, 1896) states that the blastomyces which he has constantly found in malignant growths is nothing more than the common yeast, saccharomycetes cerevisiæ, and he defines, tentatively, epithelioma (on which his statistics have chiefly been made) as the expression of a peculiar symbiosis of epithelial cells, leucocytes and saccharomycetes

Roncali studied five sarcomata, in all of which he found blastomycetes that resembled each other very much and were similar to those described by Sanfelice, and by the author, as occurring in adenocarcinoma of the ovary They take the specific stain of blastomycetes, and resist the action of acids and alkalies like those found in the adenocarcinoma of the ovary The parasites may be found within and without the cells, exceptionally also in the nucleus, they multiply by budding, and may in the early stages, i e, when without membrane, possess an abundant chromatic protoplasm, or in the adult stage, i e, with membrane, may have but little chromatic protoplasm or a protoplasm that has entirely lost the power of staining with anilin dyes (*Centralbl f Bakt und Parasit*, Oct 26, 1895)

Sanfelice has made inoculations into guinea pigs, of a yeast which he terms saccharomyces ellipsoideus neoformans Animals that had received an inoculation into the subcutaneous tissue died, on an average, in thirty days The inoculation was in a few days followed by a local swelling, which might or might not break down The lymphatic glands of the groin and axilla also became enlarged At the autopsy the tumor in the subcutaneous tissue was soft, not firmly adherent to the skin, and presented an appearance like that of the flesh of fish, the lymphatic glands had the same characters The spleen was enlarged and was studded with elevated whitish nodules, the liver was but slightly increased in size, and rarely showed the whitish spots seen in the spleen In the kidneys the nodules were more common than in the liver The intestinal follicles and lymphatic glands were enlarged The lungs were also enlarged and contained whitish areas Brain, heart and adrenals showed no microscopic change Guinea pigs that were inoculated into the testicle died in the course of twenty-five days Testis and epididymis were enlarged and contained fish flesh like masses Inoculation into the liver was followed by the development of tumors, single and multiple, in that organ The changes were most marked after intra-abdominal inoculations A severe peritonitis, which the author terms a neoplastic one, was always noted The viscera also presented nodules as previously described The nodules contained enormous masses of blastomecetes Many leucocytes containing blastomycetes were seen Histologically the tumors consist of a network of young connective tissue in the meshes of which a variable number of cells resembling lymph-corpuscles is seen Parasites are so abundant as to constitute the greater part of the nodules The majority of parasites lie free, and vary in their tingibility The enlargement of the lymph glands depends more on the immense number of parasites present than on a proliferation of the cellular elements The parasites could be demonstrated in nearly all the organs, but produced no reactive inflammation The absence of epithelial hyperplasia in guinea pigs is explained on the ground that death occurs too soon for it to take place

The author then proceeds to point out the striking similarity between the appearance of the blastomyces in the tissues and the so called coccidia described by many writers as occurring in the malignant tumors of man, and comes to the conclusion that the latter bodies are not protozoa, but blastomycetes, a view that had already been advanced by Russell ("*American Year Book of Medicine and Surgery*," 1897, p 708)

At this point, I wish to make an extensive quotation from a reprint by Prof R Park of Buffalo on the

"Etiology of Cancer," just received from him. My work of looking up this topic had reached this point when his article appeared, most opportunely. The paragraphs quoted present to us the completest statement of our most advanced knowledge of this much studied topic. "The work of the Italians in this direction has been most creditable and apparently most convincing. It has been done for the most part by Prof. Sanfelice, of the University of Cagliari, in Sardinia, and Prof. Roncali, of the University surgical clinic in Rome. The former published his first paper on the subject in January, 1895, and the latter followed with his first only a month later. To these two men and their assistants we owe most of that which I shall epitomize below.

"As the work of these Italians points, with a high degree of probability, toward the blastomycetæ as the active agents, it will be worth while to stop for a moment and rehearse the most important facts known with regard to this class of fungi. It is best known as that to which the common yeast forms belong. These fungi reproduce themselves, not by division into halves, as do the common bacteria, but by the process of budding, the cells, when undergoing this process, appearing under the lens much like the common forms of cacti. Each bud provides itself with a membrane when separating from the parent cell, and thus becomes complete in itself. The parent cell does not die in this process but gives rise to other buds, the entire process consuming about two hours in those forms where the life history can be easily watched. This is slower cell division than occurs with the ordinary bacteria. The new cells thus produced are often bound together in clusters or irregular chains. Each cell has its proper membrane, which is filled with protoplasm, and contains a nucleus. It will average eight to ten millimeters in size. Under particularly favorable circumstances spore-formation may also take place, so that from two to ten endospores may be seen in one parent cell. These spores are less resistant than those of the common bacteria. They are killed by five minutes' exposure to 62-70 degrees C. Those blastomycetæ which are capable of spore formation are the least hardy, living in the ground for about a year, while others can live, under the same conditions, for three years. This is worth remembering, because there is much reason to think that these fungi are introduced into the system from the most common sources and by the ordinary paths of infection.

"They will grow on media which are slightly or strongly acid, and by this means can be separated from many of the common bacteria. Each species has its own peculiarity as to behavior respecting the various sugars. For example, by an ordinary wine yeast 1000 grams of grape sugar were split up into 506 grams of alcohol and 30 grams of other products, including 21 grams of glycerin. (By the way, the taste of various wines is quite perceptibly influenced by the amount of glycerin present therein.) Alcohol fermentation can go on with or without access of air. If air be present, cell production is more active, and other cell activity is lessened and *vice versa*. Acetic fermentation and putrefaction are facultative aerobic actions.

"So far as pathogenic activities are concerned, blastomycetæ are known to be active disease agents in certain cases. They are commonly found in the urine of diabetic patients, but whether by accident or in some other relation is not positively known. Numerous forms have been cultivated and inoculated, with resulting severe or even fatal symptoms, as in the morbid condition called saccharomycosis, which is known as an experimental disease. Thus it is established that a general infection from this cause is possible, and the question may arise whether general carcinomatosis is of this nature.

"Now, it is almost exclusively the blastomycetæ with which the Italians have worked, and have produced their remarkable experimental results, for they have found these organisms both within and between and around cancer cells, and have succeeded in making cultures in and upon acid media. Moreover, by inoculations with these cultures they have produced tumors in animals which bear the strongest possible resemblance to those neoplasms from which the cultures were originally made.

"These parasites must be sought for in the periphery of the tumors and in the juices of the same, but not in the central portions, for here they often seem to have disappeared. This is true both of sections for microscopic examination and of the portions which are taken for inoculation purposes. Furthermore, most of the experimental tumors thus produced have returned the same blastomycetæ upon further culture tests. Two or three different forms have been definitely named by their discoverers, thus Sanfelice has described a saccharomycis lithogenes, and Roncali a blastomycis vitro simile degenerans. These names both call attention to the remarkable properties which some of these fungi possess, not only of undergoing rapid degeneration, but of displaying a peculiar calcareous deposit within the cell membrane, which is undoubtedly due to calcium carbonate, since when these are treated with 4 per cent solution of hydrochloric acid the degeneration forms all disappear, while when treated with 4 per cent sulphuric acid, crystals of calcium sulphate form. As showing also their marked tendency toward degeneration, Roncali placed two pieces of tumor in a Petri capsule and kept it 37 degrees C. for four days. In the juices the undegenerated forms were undoubtedly much more abundant than in the fresh specimens, which would indicate their truly parasitic nature.

"As an illustration of the method of securing cultures, he prepared in one case sixty tubes of distilled water containing a little sugar and acid, in each of them he placed small bits of tumor cut with a sterilized knife. These were kept at 37 degrees C. for ten days, when surface growths were found upon forty-seven of them, which, when examined in the hanging-drop, were easily recognized as blastomycetæ.

"Sanfelice has produced small tumors in numerous of the smaller animals by injection of his saccharomycis above alluded to. It is most interesting also that some of the blastomycetæ which he discovered in tumors were identical with those found upon the common lemon, which grows so abundantly upon Italian soil. Among other experiments he injected saccharomycis into the mammary gland of a bitch, which lived for fourteen months and then died with a definite tumor in the gland and with metastases in various organs. Also, after injecting this culture into the abdomens of guinea pigs, he saw them die in from twenty to forty days as the result of neoplastic lesions, while when injected beneath the skin, they killed the animals in from thirty to fifty days with local manifestations.

"Thus, without quoting in detail the experimental labors of Sanfelice, Roncali and their pupils, it may be stated as positively proven that the blastomycetæ above alluded to, i. e., at least some of them, are capable, first, of being isolated by culture methods from certain carcinomata and sarcomata; second, of identification as belonging among the yeasts; third, of producing tumors in animals by injection under suitable precautions, the resulting tumors being strikingly analogous to or identical with those from which cultures were made; and fourth, of furnishing from these tumors further cultures, from which yet other experimental inoculations can be made.

"Without going so far as to say that this can be done in every instance, or that all cancers are necessarily of parasitic origin, one is justified by these results in at least maintaining that some cancers are positively of such origin. If upon this experimental ground, one should infer that all cancers are parasitic manifestations he would do, as will be seen, little violence to the laws of logic."

The foregoing quotation gives all that can be offered up to this writing on the latest investigations on this vexing question.

The agent used in the cases I herewith report is the carbid of calcium. Its name indicates its composition. M. H. Moisson first obtained, in 1894, a crystalline compound of carbon and calcium by employing the intense heat of his electric furnace whose temperature may approach 3500 degrees C. Its specific gravity is stated to be 2.262, the low figure being due to the fact that calcium is next to the alkali metals, one of the lightest of the metallic bodies. Exposed to the atmospheric air it is soon resolved into coarse powder-like sand. It is very refractory. A chisel and a hammer are necessary to reduce it to small pieces suitable for use in treating cancer. In the presence of water acetylene gas, the new illuminant, is instantly evolved. Upon dropping a fragment into a basin of water, one can ignite the escaping gas, which presents the apparent phenomenon of burning water.

The chemic formula of the carbid of calcium is CaC_2. That of acetylene gas is C_2H_2. It is liberated from the carbid of calcium by water. The equation representing this is $CaC_2 + H_2O = C_2H_2 + CaO$. A piece of the carbid of calcium can be thrown into a firy furnace and it will not ignite. It can be fused and run into molds of any design without ignition. A piece can be held in a Bunsen burner without the least effect. But if a drop of water is put on the stony substance, it effervesces and the gas can be lighted and will burn like a piece of wood for a few seconds until the water is exhausted. Then it goes out.

Commercially, acetylene gas is very valuable. Discovered only five years ago, it has already become a most formidable rival of the old gas companies. It is rapidly being introduced as the illuminating agent in residences at a moderate expense. It is meeting with especial favor in small towns where no gas companies exist. Individual plants are set up in back yards where safety from explosions is secured, whence the gas is conveyed by proper piping to the houses, which are thus more brilliantly lighted, many times over, than by ordinary illuminating gas. It produces a singularly white, bright flame. Several jets of it can make the ordinary Edison incandescent coil appear like a red-hot hairpin. Many of the old time gas companies are adding a small proportion of acetylene gas to that used by them, with the effect of giving their customers better light. So clear, steady and powerful is the light made by acetylene gas, it has been proposed to make it the standard for photometry. The numerous ways in which it is already used indicate the readiness with which its superiority is accredited. It is used in bicycle lamps. The oculist, aurist, and laryngologist are using it to illuminate the organs that they investigate. It is used in electrometers. It is used in lighting omnibuses. It is employed in the stereopticon and in photography. Microscopists and chemists in blow-piping, are employing it. It possesses a very low temperature of ignition. It can be solidified at a comparatively low pressure ("L'Acetilene e le sue Applicazioni." Published in Milan, Italy). When liquified, it passes into the state of snow, like carbonic acid. This snow, upon evaporating, lowers the temperature 180 degrees.

Acetylene, containing C and H, permits the curious fact that the proper amount of oxygen can be added to it to make pure alcohol. Commercially pure alcohol can thus be made at a cost of four cents per liter.

Acetylene gas is distinctly poisonous when administered to animals in a sufficiently concentrated form. Inhaled in the open air, it is but slightly harmful. The recent experiments of Grèhant, Berthelot and Moissan show that it is fatally poisonous when present in proportions as high as 40 per cent. by volume. One hundred volumes of air dissolve about eighty volumes of acetylene. If any compound of acetylene and hemoglobin is formed, it is very instable and is not analogous to carboxyhemoglobin (Brocmer, *Boston Med. and Surg. Jour.*, July 30, 1896). One pint of pure acetylene given rapidly to dogs, guinea pigs and other animals caused severe symptoms of poisoning, but the animals recovered when placed in the open air. If given slowly, they did not recover when placed in the open air (Mosso and Ottolenghi, *Rif. Med.*, Jan. 23, 1897). Paralysis of the respiratory function is the toxic effect of this gas.

Recently many reports of explosions of acetylene have been made in current publications. Its explosive power is greater than that of ordinary illuminating gas, but it is not more dangerous when the ordinary precautions are taken. Brass should be avoided in pipes and burners intended for use with acetylene, since it unites with copper to form solid copper acetylene which explodes violently on percussion or on heating to 200 degrees C. Rosemann states positively that acetylene does not combine with hemoglobin (*Arch. f. exper. Path. u. Pharmakol.*, V. xxxi, p. 179). The poisonous action of acetylene, while admitted by by all experimenters to exist, is now claimed to have been greatly exaggerated by earlier investigations because of the probable presence by impure gas (Grèhant, Berthelot, Moissan and Beocinet, "Comptes Rendus," 1896). Its odor is not unpleasant. To some people it is faintly aromatic. When the carbid of calcium is reduced to the pulverulent state, the gas can still be evolved and ignited.

In the fall of 1896, I first saw reference made to the use of the carbid of calcium in the treatment of uterine cancer in some medical journal. It was contained in about four lines, which stated that some German physician used it in treating cancer of the uterus. I have forgotten his name. I therefore distinctly disclaim all pretense to originality in its use.

Treatment.—After determining that I have to deal with uterine carcinoma, the necrotic debris is thoroughly removed by curetting under anesthesia, till firm tissue is reached Hemorrhage from arterial twigs is then checked by the use of the Paquelin cautery Free irrigation with very hot water is then used to check the oozing, if necessary It is desirable to have the seat of the operation as dry as possible before using the carbid Into the cavity which extends to a greater or less extent up into the body of the uterus, a piece of the carbid about the size of the last phalanx of one's thumb, is placed At once, acetylene gas is evolved which quickly fills the entire cavity with a froth, like soap bubbles The cavity is at once packed firmly with iodoform gauze The vagina is packed full of the same material down to its ostium The patient is then put to bed for three days, when the gauze and the carbid remains are removed and a new piece is used The carbid remains are naught but a grayish clay covering the cavity in the body of the uterus It can be sponged and irrigated away in a few minutes, dried by sponging and prepared thus for another application of the carbid Upon depositing the carbid in the wound, we witness the same bubbling of gas as seen before Gauze packing is then used and the patient is permitted to remain three days until the next dressing

After a series of such applications of the dressings, the ragged, necrotic faced ulcer is converted into a simple, clean ulcer It presents a base covered to all appearances with pinkish-red granulations, destitute of the gray color which characterized its appearance after the second or third dressings After a few treatments the edges of the cavity begin to draw in, and the area of the crater is diminished Its entire appearance impresses one with the idea that it has taken on an entirely healthy character Further persistence in its use is followed by progressive contraction till finally the cavity is entirely obliterated There is a puckering of the vault of the vagina about the small uterine os that remains, the whole field being covered by healthy pink mucous membrane

CASES TREATED

Case 1 —Mrs Y , aged 69 years Her last child was born forty six years ago She passed the menopause at 48 years of age For twenty one years she had no bloody vaginal discharge On Dec 14, 1896, she complained to me saying she had had menorrhagia for six months At first, the bloody flow was only at intervals At the time of her visit, it was continuous Examination revealed about two thirds of the cervix absent from carcinomatous ulceration About one third of the cervix remained uninvaded Four days later, at the Presbyterian Hospital, I began *to do a vaginal hysterectomy* A *very careful* examination under anesthesia revealed an invasion, as I interpreted it, of the right broad ligament with thickening and some degree of anchylosis of the uterus All that was done was to curette very thoroughly and burn with the Paquelin cautery A cavity was left fully two thirds the size of an ordinary hen's egg Into this I placed a piece of the carbid of calcium the size of the last joint of my little finger I packed a large amount of iodoform gauze against the piece *of carbid of calcium* and *filled the vagina with gauze* In a week, after leaving the first piece of carbid of calcium in four days, I repeated the treatment with this agent, leaving it *in three days* *After each treatment, upon the removal of the* gauze, the wound was free from necrotic débris, hemorrhage and odor The cavity left by the curetting was beginning to contract very rapidly After the removal of each iodoform gauze packing, naught remained but sand The third treatment was made ten days later with the same result, namely, the utter absence of hemorrhage, discharge of necrotic debris, odor, and the contracting of the cavity These treatments were continued regularly till well along into May, 1897 The cavity produced by the curetting had entirely disappeared, the thickening in the right broad ligament had disappeared, and there *had been no discharge, nor hemorrhage*

I did not see the patient again until July 30, 1897 She was still without discharge or hemorrhage I saw her again the first week in October, 1897, with exactly the same condition I did not see her again until May, 1898 In the meantime, she had been remarkably well and strong, performing her accustomed duties that she had been used to for a quarter of a century Her seventieth birthday was in January of this year At her last visit in May, she informed me that she was having an occasional bloody, grumous discharge from the vagina, coming with a sort of gush as though the pent-up fluid, about a drachm in amount, was suddenly released She said it had an odor like old fish, not like cancer This discharge had been going on at intervals for a few days for about a month

I am now waiting developments in her case I do not pronounce the verdict in her case till at least two years have passed from the date of her operation The vaginal examination, at her last visit, revealed exactly the condition of things that existed one year ago The vault of the vagina was drawn together like the apex of a cone with an opening up through it, leading to what I take to be the remnant of the uterus Not a particle of solution of continuity was visible

I think the claim can be made that no other line of treatment known at the present time, would make a patient so comfortable and entirely free from the usual horrors of cancer for a space of a year and a half, as has been used upon this woman While I make no pretense of calling this case one of cure of cancer of the uterus, yet I do claim for it what I have just mentioned

Case 2 —Patient aged 53 years, had passed the climacteric seven years The cervix was entirely absent through carcinomatous ulceration, which had left the body of the uterus a simple shell She had had hemorrhages for five months before I saw her She was emaciating rapidly and losing strength, and was generally septic. Her face presented the cancerous cachexia After curetting away the necrotic debris, on July 30, 1897, naught was left of the uterus but its cortex Treatment was precisely the same as in case No 1 Similar results followed *After about five months the cavity* of the ulceration had entirely disappeared by contraction In February, 1898, she became very ill with a severe chill and pelvic pains Relief came slowly under opiates and hot fomentations, and on the eleventh day an abscess suddenly discharged through the small opening in the vault of the vagina She was up and around in a few days Since then she has, to all appearances, fully regained her strength and color and has gained flesh In the early part of May, of this year, examination revealed a total absence of any vaginal solution continuity Nothing but pink healthy mucous membrane is visible *Since the beginning of treatment in July, 1897,* there has been neither discharge, odor, nor hemorrhage She is performing her customary duties just as she did eighteen months ago

I have several other patients under observation who are receiving the carbid of calcium treatment They are in varying stages of progress No conclusions can yet be drawn from them Concerning each one the remark may be made that they are free from discharge, hemorrhage and odor, and that the cavity is decreasing in size Till the best way was learned to treat them, I did not always succeed in abolishing the odor

As to the *modus medendi* of the carbid of calcium, I have no opinion Bacteriologically, a series of experiments was made, both with the carbid of calcium and with acetylene gas, on several pathogenic bacteria, under the direction of Professor Hektoen, in the laboratory of Rush Medical College, with absolutely negative results In a few cases an erysipelatous redness of the sound mucous membrane seemed to follow the use of the carbid, which would suggest that it resulted from an escharotic action of the acetylene gas Whether the acetylene gas destroys the cancer cell by annihilative action, or by chemically changing it, remains to be seen One thing seems to be certain, and that is that the carbid of calcium at least postpones death and makes carcinoma patients vastly more comfortable while they do live, than any treatment known to the writer

31 Washington St

CHRONIC PHLEBITIS OF THE SAPHENOUS VEINS, SAPHENECTOMY

BY E VIKO, M.D

PARK CITY UTAH

The pathologic condition of chronic phlebitis is a sclerosis of the veins, similar to atheromatous changes in the arteries, the veins become cord-like All the coats of the veins may be thickened and indurated, or the external coat only may be affected In chronic phlebitis of the saphenous veins of the leg, the tissues around the veins are also swollen, often several times their natural size Varices of the adjacent branches sometimes occur In cases of long standing, eczema and ulcerated patches affect the skin, which becomes hard, thick and glazed Severe pain, especially on standing or walking, is complained of

Medicinal treatment of chronic phlebitis of the saphenous veins is very unsatisfactory Drugs may ameliorate the eczema, pain and swelling to a certain extent, but this is only temporary

Surgery promises better results Lea recommends tying of the veins The most rational method seems to be the removal of the veins They have lost their function and act only as an irritant No surgery to which I have access recommends removal of the saphenous veins for chronic phlebitis, but in view of the fact that their removal for varices effects the surest and speediest cure, I decided in one case to remove the internal saphenous vein for chronic phlebitis, with the happiest results

Mrs F , age 55 years, had been suffering for fourteen years with chronic phlebitis of the internal saphenous vein of the left leg The limb was greatly swollen and walking or standing occasioned severe pains A good part of the time she could not obtain the necessary sleep on account of the pain The skin of the leg was covered with an intractable eczema She had for several years used a variety of drugs, internally and externally, with very little result I suggested the removal of the vein, and on Feb 28, 1898, I cut down on the vein in front of the internal malleolus, it was considered easier to find the vein there than higher up on account of the swelling The vein felt and looked like a tendon The only way by which I could tell whether it was the vein or not was by pricking it The tissues over the vein were then laid open to about an inch above the knee, where the vein seemed to be healthy The swollen and indurated tissues over the vein were in most places about an inch and a half in thickness The vein was tied in two places above the knee with No 2 formalinized catgut and was severed between the ligatures As the vein was dissected out downward, branches were tied with the same material It was finally tied near the internal malleolus and removed I was careful not to injure the internal saphenous nerve The wound was closed with No 2 formalinized catgut and dressed with aseptic gauze and cotton There was no rise of temperature at any time except on the second day, when the thermometer registered 99 5 degrees The wound healed by primary union All the swelling, induration and eczema have left the leg and she is now free from pain, the first time in fourteen years Walking or standing does not cause any pain or swelling in the limb

I have examined several surgical works, even of recent date, and find no mention of removal of the internal saphenous vein for chronic phlebitis

These cases are frequently met with and the old treatment recommended is anything but satisfactory, while saphenectomy seems to be a sure and speedy remedy

In my experience in varices of the internal saphenous vein removal is better than Phelps' operation

SOCIETY PROCEEDINGS

Delaware State Medical Society

Meeting held in Wilmington, Del , June 14, 1898

The meeting was opened by the President, Dr P W Tomlinson of Wilmington, who delivered an address entitled,

THE INTERESTS, OBJECTS AND BUSINESS OF OUR SOCIETY

After commenting on the fact that the charter of this Society was only thirteen years younger than the Declaration of Independence he referred to some of the reasons why medical men did not take more interest in their annual medical meetings He urged all to make known by writing and talking whatever new observations they may make of interest to medical men and considered a medical society the best means of conveyance for this information He then dwelt at great length on the purposes of State medical societies in general and quoted fully from a number of letters received from other States, as to the results obtained by these societies in elevating the profession and killing quackery

Dr Willard Springer read a paper entitled

SHORT HISTORY OF 1800 OBSTETRIC CASES

The author divided this subject into eighteen groups of 100 each and mentioned one or two interesting cases in each group He said concerning his management of cases "If the case is an ordinary one and the labor well advanced and likely to be over soon after I first see it, I use the ordinary precaution of thoroughly washing my hands in hot water, but if the case is likely to be prolonged and to require many digital examinations or perhaps operative interference I use a bichlorid solution for my hands, carbolized vaselin as a lubricant and a solution of creolin for my instruments Of course I occasionally have a case of septic infection and then, when the temperature is high and the lochia offensive I use an intra uterine douche of a mild bichlorid solution, 1 to 4000 Last winter I saw a case in another physician's practice in which the temperature was above 106 degrees just before the douche was given The next morning it was down to 103 degrees and never went so high again, but the woman made a slow recovery on account of an attack of puerperal mania I have great confidence in antiseptic and aseptic precautions in operations of all kinds, but I do not see that I have any fewer deaths in my obstetric practice now than I did in the early years when such precautions were unknown

Dr John Palmer of Wilmington, gave the details of a case briefly referred to by Dr Springer, in which the instruments were applied for five or six hours and the brain of the child squeezed out of the head before it was delivered, the mother making a good recovery

Dr Josephine White asked how often Dr Springer had administered anesthetics in the first stage of labor in his 1800 cases and in how many cases the temperature went above normal She also commented on the indifference displayed by the better and upper middle classes toward absolute cleanliness in obstetric work and did not believe that the possibility of post-partem hemorrhage was a contra indication to the administration of an anesthetic

Dr W H Hancker of Farnhurst Del , detailed a case of delirium following septicemia in which the emptying of the uterus was followed by death in two days

Dr H J **Stubbs** of Wilmington, inquired how often the author had used anesthesia in his large experience and also how soon he would advise curetting

Dr **Jones** believed that the sooner the uterus is emptied the better so as to prevent the absorption of germs He advised that great care be taken in performing the operation, not to bruise any more surface than was absolutely necessary as these abrasions all acted as avenues for the absorption of septic material For the purpose of sterilizing the instruments as well as washing out the uterus he strongly recommended a solution of lysol, for the latter purpose using a strength of 1 per cent

Dr **Springer** closed by stating that he gave anesthetics whenever he deemed it necessary, considering each case a law unto itself He admitted employing them more frequently of late years for three reasons 1 That the method is more common than it used to be, 2, the different class of people composing his practice of late years, and 3, because people are becoming more educated to the use of anesthesia He believed that frequently anesthetics prolonged labor and made the patient feel worse afterward and reported having known cases where it had been declined after the first administration Although occasionally using ether his preference was for chloroform, but he had never found it necessary to use either in the first stage of labor Referring to the question of douching he stated that he did not make a practice of doing so before labor and not even after labor if it had been a natural one without many digital examinations and without the use of forceps When douching became necessary he preferred to use bichlorid 1 to 3000, always washing this out with a boric acid solution

As to the removal of the placenta the author's method after cutting the cord is to place one hand upon the abdomen and with the other use slight traction on the cord He did not think that breaking the cord was a serious matter, but rather thought it was good for it to bleed somewhat. In his opinion, when difficulty is experienced in removing the placenta, it is due to the fact that the whole bulk comes down right over the os and renders it difficult to compress it sufficiently to pull it through

Dr E S **Dwight** of Smyrna, Del , read a paper, entitled

POST PARTUM HEMORRHAGE WITH UTERINE CONTRACTION

After briefly describing the usual termination of a normal labor he referred to the premonitory symptoms of post partum hemorrhage and to the sources from which this hemorrhage may come, mentioning among others, laceration of the perineum due to the passage of the head or more probably the birth of the posterior shoulder, a wound of one or other vestibular bulb, a tear of the vaginal wall, or a laceration of the cervix with the tearing of an arterial branch He then gave details of four cases of post partum hemorrhage all of which he had treated successfully by the applications of tampons He referred briefly to other more recent and more scientific methods but pointed out the great difficulty of their application in a country practice, especially at night time

Dr **Charles P Noble** of Philadelphia believed that the hemorrhage in most of these cases came from the vestibule, particularly when the baby had been delivered with forceps He agreed with the author of the paper that the method of treating these hemorrhages must depend upon the facilities and experience of the individual in attendance, but strongly advised suturing whenever possible Among other objections to the emergency tampon he mentioned that they were a great source of infection

Afternoon Session

Dr **Briggs** reported a case of carcinoma in a six weeks pregnant uterus and showed the specimen removed with the fetus *in situ*, surrounded by a miniature bag of waters

Dr **Frank Springer** read a paper entitled

A CASE OF CAESAREAN SECTION

The case occurred in a colored woman, aged 25 years, forty seven inches high, with a small contracted pelvis and very much deformed lower extremities, that is to say, a marked case of rickets The patient had been in labor seven days when first seen, and the pelvic diameter was so small that it was impossible to deliver her or even save her life except by performing laparotomy This was done through an incision extending from the umbilicus to within two inches of the pubis, and a living female child was removed The wound of the uterus was closed with catgut ligatures, while the abdominal wound was brought together by silk ligatures The patient made an uneventful recovery, the wound being dressed once a day, the vagina douched twice a day, and turpentine and quinin being given for a few days Four weeks from the time of the operation the patient washed her child, which, however, died shortly after the mother left the hospital

Dr **Charles P Noble** of Philadelphia believed that Cæsarean section was no more serious than any other abdominal operation if done at the right time, in the proper way, by a competent person and in suitable cases, and mentioned that the average mortality in Germany was scarcely more than 5 per cent He referred to the fact that Sanger had done twenty five of these operations without a death, Olshausen twenty seven with two deaths, and Leopold fifty with one death, while the percentage of mortality in the United States is 40 per cent , principally due to the fact that the operation is badly done and is rarely performed except as a last resort He also partially accounted for this mortality by stating that the profession in this country neglects to study the cases beforehand sufficiently to know when to interfere He referred to the recent article by Dr Reynold of Boston, reporting twenty seven of these operations done by surgeons in the Boston Lying in Hospital without a death, thus illustrating that just as good results can be gotten here as abroad if the cases are properly studied He believed if these cases were brought to the surgeon sooner so that the operation could be done at the right time, and if physicians would learn to study more closely cases of pelvic deformity, the mortality would be brought down where it belongs

Dr H M **Thompson** of Wilmington, read a paper entitled

OBSERVATIONS IN GYNECOLOGY DURING FOUR YEARS' SERVICE AT THE DELAWARE HOSPITAL

He stated that more than 40 per cent of the cases coming to the Dispensary complained either of simple or specific inflammation of the uterus or pelvic organs the remainder being made up of displacements, lacerations, neoplasms, etc In taking up the question of the advisability of making vaginal examinations of young girls the author hoped that the rule of every conscientious physician would be never to do so unless the history of the case indicated the definite existence of local disease Chronic metritis was stated to be complained of by ten out of every fifteen women who applied to the dispensaries for relief, and the causes for this condition were inflammatory and non inflammatory Although the prognosis of these cases is often hopeless, yet at times much relief has been afforded by treatment, which was divided into medical and surgical, and the medical believed to be more valuable, consisting of hot vaginal douches and tampons, with rest and tonics combined at times with vaginal irrigation While not speaking very strongly in favor of the curette he reported having obtained good results from this method in some cases Intra uterine medication was recommended in conjunction with the hot douches and tampons in suitable cases Operative interference was referred to, but conservatism was advised in this direction The paper closed with the histories of a few of the cases which illustrated points referred to in the paper

Dr H J **Stubbs** of Wilmington read a paper entitled

ABUSE OF CHARITY

In referring to the growth of this abuse the author said "It is not only an injustice to the older men, but a crying shame to the younger, that they are graduated by the hundreds from the various medical colleges with the just expectation of remuneration, and on the day they start practice they find the patients they should expect, going to, and being treated by, the colleges from which they graduated "

The great difficulty was pointed out of ascertaining as to the rights of each individual to ask free medical advice at a hospital, and the results of such methods of treatment on the profession at large Two methods were suggested to improve this condition 1, that the family physician, when sending a patient to a hospital, should let the hospital physician or surgeon know positively of the financial position of the patient, and 2, the hospital physician or surgeon should be extremely careful to ascertain the circumstances of those that come without recommendation Quoting Dr Charles B Burnett of Philadelphia, it was stated "last of all, and not least, the improper bestowal of medical charity pauperizes the recipients, the number of whom is now so large as to practically pauperize a large percentage of the community ,

medical charity may be abused by the giver as well as by the receiver " Also quoting Dr Frederick C Shattuck of Boston "medical charity in hospital dispensaries should be freely extended to those who require it and denied to those who do not."

Dr **Judson Daland** of Philadelphia stated that the average dispensary patient was inclined to view the advice received rather as something they could compel the physician to give than as an act of charity, and urged the necessity of a uniform course of action by all physi attached little importance to the truth of the a ont's that they could not afford to pay f vice, ferred to a method practiced by one institution in Philadelphia of sending people to visit the homes of patients and ascertain the exact state of affairs

Dr, W S HAINES read a paper entitled

BURN OF SCALP WITH LOSS OF CALVARIUM, FOLLOWED BY RECOVERY

The case occurred in a boy aged seven months, who was thrown into the fire place by a larger brother, his head coming in contact with the fire The burned surface was greased with various remedies, and bromids and morphin were given to relieve the pain and spasm The soft parts sloughed off and subsequently considerable of the bone came away, leaving the brain exposed Skin grafting was unsuccessful and for some years past the open space in the skull, measuring about two and a half by four inches, has merely been covered with absorbent cotton or soft muslin, smeared with zinc ointment The patient is now six and a half years old, and is having slight convulsions once or twice a month, although he is large and active and his intellect unimpaired

Dr J A ELLEGOOD read a paper on "Foreign Bodies in the Eye," and mentioned various methods for their removal

The following officers were elected for the ensuing year President Robert Ellegood of Kent Co , first vice president, Dr Robinson, second vice president, W H Hancker of Farnhurst, secretary, Frank T Belville of Delaware City, assistant secretary, John Palmer of Wilmington, treasurer, Wm C Pierce of Wilmington

The next place of meeting will be Wilmington, at a date to be named later

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Minnesota State Medical Society

Thirtieth Annual Meeting, St Paul, June 15, 16 and 17, 1898

FIRST DAY—MORNING SESSION

The meeting was called to order by the President, JOHN F FULTON

Invocation, Rev JOHN PAUL EGBERT of St Paul

The roll call and reading of minutes was dispensed with

The report of the Treasurer, R J HILL showed a balance in the treasury, after all expenses had been paid, of $667 15 The report was adopted

The Executive committee reported that all members of the society were invited by the Ramsey County Medical Society to attend a banquet at the Merchants Hotel on Thursday evening

The Secretary read a communication from the chairman of the Rush Monument Committee, requesting that some action be taken in regard to raising funds for the Rush monument, laid on the table until following day

The subject of the President's address was

IMPROVEMENTS IN MODERN METHODS OF TEACHING

He believes medical men should take great interest in modern methods of instruction, that antique methods of set lectures have happily given away to more modern methods of demonstration, that this great progress has practically wiped out all schools, leaving but one school, viz , medical science He said that while we have in a few States, notably New York, two societies, measures have been taken to correct this and leave but one society in each State, and that one united for the best and highest good of the profession He then dealt with the history of medical teaching and said, all teaching should have for its highest aim the benefit of humanity He did not wish to underrate or ignore theoretic teaching, but thought theoretic should be subservient to practical, and that the most important of all teaching is the ability to make correct diagnoses One of the greatest advances in this direction is in the making of accurate records This has been favored very much by the use of the microscope and improvements in chemic analysis Anyone to be successful must be accurate, for inaccurate work is always unreliable and worthless A source of congratulation is that in many States examinations are now protected by the strong arm of the law and nearly everywhere are required to be thorough, searching and based upon a thorough preliminary education This is as it should be, for it is undesirable to have a doctor of indifferent general attainments The doctor's education shoud be broad and consist of much general information outside of medicine, for any one who is only educated in one line becomes narrow even in the subject in which he is supposed to be best informed

Adjournment was then taken until 3 P M

FIRST DAY—AFTERNOON SESSION

In the Section on Practice of Medicine Dr GENTLES of Chicago presented a paper on

TREATMENT OF PNEUMONIA BY COLD

He said the use of the cold bath had been given up on account of the danger of shock and syncope The gradual cold bath had also been abandoned on account of requiring absolute assistance, as the patient must not make any effort He advocated the use of ice bags locally, filled first with ice water and later by chipped ice They should be light and thin, so as to be easily applied and well borne He claimed the red corpuscles would be increased by the application of cold In delirium, cold sponging would reduce the temperature A part of the body only should be exposed at one time and the part well rubbed Cold in pneumonia must not be applied too suddenly

Dr HUNTER said we might as well admit we had no special treatment for pneumonia He had not seen cases modified much by treatment and, on the other hand, had seen cases get well almost in spite of treatment The most we can do is to keep up the patient's strength until the disease runs its course He has used digitalis, but does not believe it to be a specific or an abortant, and he thinks we have no remedy equal to cold, but it should not be used for the purpose of shock and not be continuous

Dr ABBOTT said that we have a localized inflammation in pneumonia, very unlike typhoid or similar fevers He knows of no remedy equal to cold, but he uses Leiter's coil in preference to ice bags, having found that ice bags would get full of air and not lie smoothly on the surface If used they must be kept free from air, a very difficult thing to do He would keep up cold continuously

Dr ANDREWS thought the danger was not from high temperature and concluded the cold treatment was irrational He believes the danger is in the temperature going below normal, and does not believe in the use of cold

Dr THOMAS thought the pyrexia was the result of reaction rather than toxin

Dr GENTLES, in conclusion, said that bad results depended rather on the amount of excretion than on toxemia

Dr RAMSEY of St Paul then presented a supposed case of

MYXEDEMA

The patient was a German aged 44 years and mother of ten children, the youngest 3 years old She is now in the menopause, five years ago began to grow fleshy and weak mentally and physically, has pain in right shoulder feels tired, sleepy, nervous and apprehensive, perspires a little, urinates without control and frequently The urine is normal in every respect Temperature normal There is a deposit over the entire body, lips thick, hands and ankles enlarged but no pitting on pressure, skin thickened, eyes expressionless, hair falling out, has been taking 5 grains of thyroid extract three times a day for three weeks with no improvement The patient was examined by many of those present and much interest manifested

Dr CRAFTS presented a paper on

MEDICAL EDUCATION

He reviewed the advances of the last twenty years and expressed great satisfaction at the higher degree attained by the medical graduate of today over former times He thought the working of the law in many cases unfair, *e g* , when a man who had perfectly qualified himself was not allowed to write a prescription until he had a certificate from the State Board, while a quack could advertise and practice under the very eyes of the officers with perfect impunity and safety

Dr SWEENY, in discussion, thought these cases should be prosecuted by the local doctors, and stated that the Board of Examiners had no power to prosecute

The general trend of the discussion seemed to be in the line of a national control of medical practice and qualifications and that after we had a health officer in the Cabinet, a uniform management of these things would be an easy step

SECOND DAY—MORNING SESSION

Dr WALLING presented a report on "Antitoxin in Diphtheria." The report was accepted and the committee discharged

His Excellency, DAVID M. CLOUGH, governor of Minnesota, and Mayor KEIFER of St Paul were introduced and made brief addresses

The following were admitted to membership in the Society H H Witherstine, W A Dennis, W A Darling, A F Strickler U G Williams, Henry Cotton, Chester M Conlan, R. V Earl, C W Moore, R J Sewall, Joseph A Smeadlie, Charles F Dewey, M H. Reynolds, R R. Stover, C A Smith, C S Reimstead, J R. Pederson, F A Knights, G E Sinkler, G J Tweedy, Charles Genuo, A S Flemming, T E W V Appleby, C P Robbins, Ralph Peters, E E. Harrison C D Huntington, C P Robbins and A F Munroe.

Prof John V Shoemaker of Philadelphia was, by unanimous vote, invited to deliver an address at the next annual meeting

In the Section on Practice of Medicine Dr Walling presented a report of two cases of appendicitis treated by calomel and high injections, and Dr Hatch read a paper on "Appendicitis from the Standpoint of the General Practitioner"

The general consensus of opinion in the papers and the discussion which followed favored an early operation where there was no general glandular infection and when the surroundings would warrant opening the abdominal cavity Other papers in this Section were "The Value of the Diazo Reaction in the Early Diagnosis of Typhoid Fever," "Widal's Test," "Lead Poisoning from an Unusual Source" and "Induced Abortion, Sepsis Anurea During Eleven Days, Death"

Second Day—Afternoon Session

Dr John T Rogers presented a paper on

CONTUSIONS OF THE ABDOMEN AND THEIR SURGICAL TREATMENT

He said contusions resulted from kicks, blows and being caught between two solid substances as by logs, etc. There might be death without visible injury to the walls or, in some cases, any appreciable injury to abdominal contents The chief symptoms were pallor, lividity, vomiting, tympanites A contusion might injure any of the contents of the abdomen The pulse and temperature could not be depended on for diagnosis, but were useful in prognosis A small hard pulse and subnormal temperature being indications of fatality Where abdominal contents are ruptured 96 per cent. of the cases die He favors an early operation and believes it better to open the abdomen and find nothing wrong than to wait and take many chances Rupture of the kidney is not as serious as rupture of other organs, since it may be removed and the function performed by the other

Dr Mayo has seen many cases and believes the greatest trouble is that they never recover from the shock and thus render an operation nearly impossible He saw one boy who was run over by a wagon, who afterward developed ascites, a quantity of bile colored fluid was drawn off and he recovered

Prof J B Murphy of Chicago said the time for operation was important, but could not be given with exactness When there is pain without cessation and nausea, it is best to operate Inflammations following this character of injuries are much more fatal than other infectious inflammations, but he could not tell why

Dr McLaren favors an early exploration to determine the nature of the injury He reported a case of rupture of the gall bladder by contusion The inflammation developed slowly and death resulted in three days The postmortem showed the patient had a large gall bladder with numerous gall stones and he believes that if an operation had been made early the chances would have been favorable

Dr Mayo presented a paper on 'Abscess of the Lung" Dr Murphy of Chicago in discussing this paper gave his ideas of treatment of cavities in the lung by rest procured by filling the pleural cavity with gas, as advanced at the late meeting of the American Medical Association at Denver

Many were the patriotic and witty responses to the toasts at the banquet tendered by the Ramsey County Medical Society in the evening

The response to "Remember the Maine," by the president of the Society, Dr John F Fulton, was particularly apt and patriotic

D Park Ritchie exceeded himself in an overflow of dry humor in his response to "The Fallacious Doctrine of Malthus"

Third Day—Morning Session

The next meeting of the Society is to be held at Minneapolis, June 21, 1899

Election of officers resulted in President, F A Dunsmoor, first vice president, A T Couley, second vice president, Mary Whetstone, third vice president, John Williams, secretary, William Davis, treasurer, R. J Hill

Third Day—Afternoon Session

The Section on Obstetrics and Diseases of Children convened at 2 P M

Dr W T Adams, chairman of the Section, presented a paper on "Injuries to the Cervix Uteri" He thinks one more cause for laceration should be added to those usually enumerated by authors, and that is, that the anterior segment being unsupported by the walls of the vagina, is often pushed forward to a great degree, rendering a lateral rupture much more liable

Dr R E Cutts, in a paper on

CAUSES OF MATERNAL DYSTOCIA,

Thought two causes were too much forward inclination of the plane of the superior strait and lordosis of lumbar vertebra, either one throwing much of the expulsive force on the pubes. He also deplored the meagerness of clinical instruction in that the student is merely permitted to see and attend cases without a special instructor

Dr Erdman thought that whenever possible an examination should be made previous to labor and all probable or possible causes of dystocia should be known He says students are not allowed to do this as much as they should be

S W Rauson of Dodge Center, in a paper on

CARE OF PREMATURE AND FEEBLE INFANTS

Said, too little was done to save the great army of such children born annually Many may be saved by proper feeding and protection from drafts The latter may be accomplished in absence of more perfect apparatus by placing in cotton near a coal stove or over a lamp where a constant temperature may be maintained The temperature must always be indicated by a thermometer at the head and be at first from 99 to 100 degrees The best food is mother's milk, next a wet nurse, and next cow's milk properly diluted and prepared

Dr Cool suggested that the reason a wet nurse was not the best was because the milk was not properly constituted, the colostrum necessary to act on the bowels of the child is not present.

Dr Whetstone said the first bath should always be omitted and the child oiled instead, if this were always done she thought the mortality would be greatly diminished

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The Denver and Arapahoe Medical Society

Meeting held at Denver, Colo, April 25, 1898

POTT'S DISEASE

Was the subject of the symposium Dr J T Eskridge opened the discussion by reading a paper on the diagnosis of Caries of the Spine He said I *regard what is commonly* known as caries of the spine, or Pott's disease, as a tuberculous inflammation of the various structures that compose the spinal column, and shall endeavor to differentiate it from numerous affections of these structures that are, in all probability, non tuberculous in their nature

Until recently an account of caries of the spine could be found only in works devoted to surgical subjects So far as my information goes, Gowers is one of the first writers on the diseases of the nervous system, to devote in his work a lengthy discussion of this subject The symptoms of the diseases of the spine should be as well understood by the physician as the surgeon, because a failure to examine for these, and to appreciate their importance in an early stage of the disease, may result in irreparable damage before the surgeon is consulted

Causes—Caries of the spine, in proportion to the number of inhabitants, is more frequent in Colorado than in the eastern and southern portions of this country There are two reasons for the comparative frequency of the disease among us One is that a larger proportion of our population follow dangerous occupations, especially mining in which the laborer is more subjected to injuries of the spine than are those who live in agricultural and manufacturing districts The second is, that a large number of those who reside in Colorado are suffering from chronic tuberculosis Tuberculosis and traumatism to the spine are the two principal causes that result in caries of the bones of the spinal column In regard to sex, the cases which I observed in adults in Colorado show that males suffer about four times more frequently than females Before the 15th year my cases show a slight preponderance of the disease in the female Caries of the spine is common in childhood after the third year, and next in young adults, but in Colorado we find an exception to this rule, as adults from the 20th to the 45th year are by far the most frequent sufferers It does not seem to me that children in Colorado are afflicted more frequently with the disease than what is found in eastern portions of the country, this too in the face of the fact that a larger proportion of the children in Colorado have tuberculous parents Old age is not exempt from the disease I have met with it in a woman in her 65th year, and in a man aged 67 The disease has occurred as early as in the fifteenth month

Caries may follow injuries to the back in which the bones have not been directly injured, but inflammation may extend to the periosteum and bone substance from torn and inflamed ligaments Caries of the spine following traumatism that has not fractured the bones may come on several months after the receipt of the injury, and in some instances after all symp[illegible] of the injury have passed away [illegible] an [illegible] role in the causation of caries of the [illegible] mation, abscess, and blood poisoning may give rise to disease of the vertebræ

Location —The dorsal, cervical and lumbar regions of the spine, in order named, are most frequently the seat of caries

The *symptoms* of caries of the spine may be divided into general and local The former are most commonly seen in children They consist of an appearance of declining health. The child is pale, anemic, feeble, the appetite poor and the bowels irregular Flesh is lost, strength is lessened and the gait resembles very much that of a feeble, tottering old man The step is short, slow, the foot is carefully placed on the ground, the ball of the foot bearing most of the weight of the body; the legs are slightly bent at the knees, the body is thrown forward at the hips, and while the spine is slightly bent forward at the cervico dorsal junction, the back of the head is thrown backward, and in consequence, the chin projects well forward The gait might be classed among the local symptoms of the disease I have chosen to speak of it under the general, as it is only typically seen in children, and usually in those who present well marked constitutional symptoms of impaired health

Local symptoms —These may, for the sake of convenience of study, be divided into bone nerve root and cord symptoms

Bone symptoms —Judging from my own experience, the earliest and most important symptoms of caries of the spine in the adult, and in many children, are localized pain, tenderness and muscular rigidity The pain in the spine is felt at the affected part. I have never seen a case in which active caries affected two regions of the spine at the same time, and in consequence I have never met with a case in which there were two seats of pain in the spine from caries at the same time In fact, when the pain has a long vertical extent, or when two regions of the spine are the seats of pain, the indications are against, rather than in favor of caries, or any other organic disease of the bones The pain may be increased by jarring or rotating the spinal column, by quickly bending the spine backward or forward or from side to side, and especially by firm pressure over the diseased bones It is among the earliest objective symptoms, and is probably the most constant. When the disease is situated in the most movable portion of the spine as in the cervical region, movements of the spinal column, both voluntary and forced, are the most painful The patient instinctively fixes the head in an abnormal position Sometimes it may incline to one side so persistently as to simulate torticollis, but the sterno cleido mastoid muscle is tense on the side toward which the head is inclined, just the opposite of what we find in the latter disease I have seen a few cases with apparently considerable thickening of the spines in the dorso lumbar region following injuries to this portion of the spinal column Marked deformity is often absent when the morbid process occurs in the cervical region until the disease has made considerable progress A person, either a child or an adult, who can jump from a low chair down on the floor and light on his feet without experiencing considerable discomfort in the spine is probably not suffering from an inflammatory condition of the spine An easier and safer test than the one just referred to, is to get the patient to jump from the floor and light on his heels This will usually cause pain in the spine if caries is present So far, I have met with only one case of unilateral caries of the spine in which the symptoms were distinctly unilateral for a period of several months

Nerve-root symptoms —Nerve-root symptoms may be divided into four classes sensory, motor, reflex and trophic The earliest of these, as a rule, are the sensory When the disease is high up in the cervical region, the pain extends over the posterior portion of the head, in the cervico dorsal the arms suffer and when the lumbo sacral is the seat of the morbid process the pain may be felt along the course of the sciatic nerves When the pains are first felt, the skin over the area to which the affected nerves are distributed is hyperesthetic, but later irregular areas of partial or complete anesthesia are present Muscular rigidity from irritation of the nerve roots is not an early symptom The deep reflexes of the legs are probably not affected in caries of the upper two thirds of the spinal column unless the cord is affected I have seen a number of cases in which the plantar reflexes were greatly increased, and others in which they were normal or lessened before the disease had made much apparent progress Trophic disturbances are seen only occasionally early in the course of caries of the spine According to my experience herpes zoster occurring along the course of the irritated spinal nerves, is a very infrequent affection from bone disease

Cord symptoms —Are very frequent, they occur after the bone disease has made considerable progress The mode of onset of cord symptoms varies greatly in different cases They may come on slowly and require months or a year or more to reach their height In a few cases complete paralysis, especially of the legs, has developed suddenly One case under my care some years ago, one leg was almost completely paralyzed six months before the other was perceptibly affected The cord symptoms are motor, sensory, ataxic, reflex and trophic It is not uncommon to have almost complete muscular paralysis of the parts below the lesion with sensory phenomena intact. If the lesion is high up in the cervical region so that the arms are not involved by damage to the nerves that supply them, the legs may be paralyzed before the arms When the bone disease is on the level of the origin of the nerves that supply the arms, the latter will be affected by paralysis and wasting before the legs exhibit much impairment of motion In caries of the spine affecting the lumbar enlargement of the cord, facial paralysis, muscular wasting and other pronounced trophic disturbances, with abolition of the reflexes of the legs, will be found I have in two such cases obtained ankle-clonus, although there was no vestige of the knee jerks I have seen several cases of caries of the spine that had been mistaken for locomotor ataxia on account of the marked degree of muscular incoordination, together with shooting pains present Persistent loss of voluntary control over the sphincters of the bladder and bowel in caries of the cervical or upper three fourths of the dorsal region indicate a severe lesion to the cord

Diagnosis —Pain in a limited region of the spinal column, increased often by extreme lateral, forward and backward flexions of the spine, rigidity of the muscles that fix the bones at the affected part of the spinal column, the presence of tuberculosis, the history of injury to the spine or of tuberculosis in the family, areas of hyperesthesia, anesthesia, muscular wasting in arms, rigidity or flaccidity of the muscles of the legs When evidences of bone disease precede cord symptoms, a diagnosis of caries, with sequential nervous lesions, will rarely be wrong

Primary pachymeningitis gives rise to nerve root and cord symptoms similar to those following caries of the spine The absence of the positive evidences of bone disease and the diffuse character of the nerve-root symptoms would be in favor of primary pachymeningitis The absence of such causes of pachymeningitis as syphilis, alcoholism and repeated exposure to cold, is in favor of caries

Progressive muscular atrophy —The irregular distribution of the muscular atrophy in caries, the severe pains along the course of the spinal nerves injured as they emerge through the diseased vertebræ, and the presence of areas of hyperesthesia or anesthesia, with perhaps local evidence of bone disease, such as pain and tenderness in a limited portion of the cervical spine and rigidity of the posterior cervical muscles, would serve to distinguish caries from progressive muscular atrophy

Spinal irritation —In spinal irritation there are usually two or more areas of considerable vertical extent of spinal tenderness In spinal irritation deep pressure does not increase the pain over that produced by slight pressure I am not prepared to accept Dr Gibney's statement that "in Pott's disease particularly in children, there is very rarely tenderness over the spinous processes " I can not recall a single case of caries in the early stage in the adult in which the spinous processes of the affected vertebræ were not somewhat sensitive to firm pressure and forcible lateral movements of the spine

Hysteric paraplegia —The presence of distinct evidence of bone disease in the vast majority of such cases, and the undeniable proof of an organic lesion of the cord, will be found if carefully searched for and should prevent such a mistake

Sciatica —When only one sciatic nerve is involved in caries beginning unilaterally, an error in diagnosis may occur It can, as a rule, be prevented if it is remembered that in neuritis due to pressure the nerve below the seat of pressure, while it may be the seat of pain, is not tender until sufficient time has elapsed for descending neuritis to affect the peripheral portion of the nerve

Torticollis —A mistake in diagnosis may usually be prevented if it is remembered that in torticollis, the head is fixed by muscular contraction, and the face and head are turned to the side opposite that of the tense sterno cleido mastoid muscle, while in caries this muscle is tense on the side toward which the head is turned, this muscle being simply stretched on account of the fixation of the head from bone disease

Neuralgia —In all cases of supposed neuralgia of the fifth cranial nerves and of the spinal nerves, the spine should be carefully examined

Syphilis —I have never seen a case of disease of the spinal column in which I could, with any degree of confidence, make a diagnosis of syphilis, neither am I able to learn from the literature on the subject any reliable diagnostic symptoms, by the presence of which syphilitic lesion of the spinal column may be diagnosticated We must remember, however, that it is sometimes impossible to distinguish between a tubercular and syphilitic dactylitis A patient, a colored woman, has been in the Arapahoe County Hospital for a period of about two and one half years, whose whole dorsal region is arched forward, with shoulders and hips thrown backward There has been no tenderness of spines, no positive evidence of disease of any of the vertebræ and no symptoms of spinal cord or nerve root lesion The deformity is gradual, not acute, and involves six or eight vertebræ The muscles of almost the entire dorsal and lumbar regions appear to the touch nearly as hard as wood, and are not tender under firm pressure Her condition does not appear nearly as desperate as it did at the time of her admission into the hospital She made considerable improvement at one time under large doses of potassium iodid and inunctions of blue ointment

Rheumatism —If the rheumatism attacks the joints of the spine there is said to be no pain caused by jarring the spine, as in walking or by crowding the vertebræ on themselves in vertical pressure I am inclined to think that this test of Ransom is unreliable In case deformity of the spine takes place from rheumatism, the kyphosis involves several vertebræ and is less acute than in caries from tuberculosis

Gonorrhea of the spine —I have had no personal experience with gonorrhea of the spine The most reliable points in the diagnosis are the presence or gonorrheal rheumatism in other portions of the body and great tenderness of the spine

Typhoid spine —I published some years ago a clinical lecture which I delivered at the Arapahoe County Hospital, on a case of tender and disabled spine following an attack of typhoid fever I have seen two cases of this affection during the past two years, one of them at the expiration of eighteen months is scarcely well yet The diagnostic points are, it comes on a short time after an attack of typhoid fever, is attended by great pain and tenderness of the spine, often of considerable vertical extent.

Infectious diseases —Personally I have had no experience with disease of the spine following such infectious diseases as diphtheria, scarlet fever and measles The apparent cause, the sudden onset, the acutely painful condition of the spine without deformity, the affection of several vertebræ and the rapid recovery, would distinguish this morbid condition from caries

Paget's disease —It usually occurs late in life and is attended by a stiffening of the spine which is not very painful, and no exaggeration of the normal curves of the spinal column

Hydatids of the spine —It is probable that a diagnosis could be made only after the character of the cyst was ascertained

Non tuberculous traumatic inflammation of the spine —It is probable that most of the inflammatory conditions of the bodies of the vertebræ if they are not tuberculous at first, soon become so if the disease is not arrested

Dr S A Fisk said that his experience does not coincide with that of Dr Eskridge He has seen very little of tubercular bone disease in Colorado He considers the idea that every bone disease is of tubercular origin to be a fallacy It would be just as reasonable to say that every case of diarrhea in tubercular patients is of tubercular origin He cited several cases which illustrated his standpoint His treatment consists mainly in rest combined with fresh air and sunshine, a condition nowhere so ideally obtainable as in Colorado He cited several cases of bone disease following typhoid fever, the affection having settled on the ribs, tibia, etc

Dr Packard discussed the mechanical treatment of Pott's disease He said It can safely be said that the results from medicinal treatment of Pott's disease in this country are generally superior to those obtained in any other country, and are largely due to the fact that the surgeon does not delegate to the instrument maker the adjustment and care of apparatus Who would think of asking an instrument maker to adjust the splints in a case of fracture?

The results obtained vary according to the region of the spine involved Caries in the cervical, lumbar and five lower dorsal give comparatively good results It is the seven upper dorsal that give cause for anxiety

The methods of mechanical treatment are limited to the jacket, the antero posterior splint and the recumbent position After having considered various methods of application, he concluded by saying I want to emphasize the importance of continuing mechanical support for a long time after all the acute symptoms have disappeared, as the relief that follows efficient mechanical treatment is very great. Sometimes the friends of the patient are deceived by this and expect a rapid cure There is also danger of the medical attendant becoming over enthusiastic over the rapid improvement and consequently he may remove the support long before consolidation has taken place. Under these circumstances, a relapse is almost sure to follow

PRACTICAL NOTES

Ptosis Cured by Grafting the superior rectus on the tarsal cartilage, is reported by Motet of Angers, two cases.—*Progrès Méd*, May 21

The Endolascopic Sound is the name given by Remond and Noe to their instrument, presented at a late meeting of the Paris Académie de Médecine, which allows the insertion of the Crookes' tube into the cavities of the body, liquids, masses of muscle etc, for diagraphy Projections allowing for the known distortions complete the process and render the "views," mathematically correct —*Bulletin*, May 10

Skin Flaps retain their Vitality for weeks if kept in sterile ascites fluid as Ljunggren has demonstrated He now reports a number of observations in which flaps six to nine days old were transplanted and healed into the tissues in the most perfect manner, with unmistakable evidences of practically unimpaired vitality —*Deutsche Ztschrft f Chir*, xlvii, 6

Specula of Glass and Celluloid —C H Stratz of Haag uses a speculum made of glass with an open tube space running through it to convey cauterizing substances to the portio and uterus without contact with the hand or vagina. The tissues can also be examined through the glass He also recommends his celluloid speculum for hot water irrigations Water of 40 to 50 degrees C can be used without pain and with surprisingly favorable results in parametritis —*Munich Med Woch*, May 10

Infection of the Thread by the Fingers during the operation is the chief cause of stitch suppurations, O Bloch believes He recommends disinfecting catgut with phenicated water, which swells and softens it, hardening it again in alcohol The needle and thread are held with forceps while being threaded and the latter not touched with the fingers more than can be avoided, and never any part that is to be left in the tissues —*Revue de Chir*, May 10

Improved Technique of Electric Treatment for Vomiting in Pregnancy —The patient eats at the séance, and then as the nausea appears, a single large electrode is applied, fitted to the neck, the median space insulated with rubber, each active end covering 20 square centimeters, over the vagus, with the negative electrode on the epigastric region, 150 square centimeters in size Ten minutes arrested the nausea and six daily séances abolished it completely in one case reported —*Semaine Méd*, May 25

Angiotripsy Hemotasis without Clamps or Ligatures —Tuffier reports twenty three vaginal hysterectomies all successfully performed with the assistance of the new angiotribe The ablation of the uterus proceeds as usual, but instead of applying clamps to the broad ligaments they are seized between the jaws of the angiotribe and crushed, the instrument then removed The hemostasis is perfect (*Semaine Méd*, May 25) Doyen's similar instrument exerts a crushing force of 400 to 1200 kilograms, and, he states, renders all operations in which it is used, much shorter and more certain

Laparo Hysterectomy for Carcinoma Uteri should be reserved for cases in the early stages, as otherwise even this serious operation proves merely palliative, like vaginal hysterectomy Jacobs has only had two patients survive over two years out of seventy on whom he performed vaginal hysterectomy, and Bouilly's ultimate results in 127 are equally unfavorable He considers it scarcely more effective than amputation of the cervix, as it is impossible to attain all the affected tissues Out of eleven on whom he performed laparo hysterectomy all recovered but one, who succu [illegible] ortly afterward, but three already show [illegible] e in three to five months —*Semaine M*

"Abaissement" Method of Inguinal Herniotomy—Reille recommends this method for small and medium hernias as simple and reliable, after an experience of seventy-two cases After the hernial sac is out of the way, the external oblique is slit at the external inguinal ring so as to expose the edge of the internal and transverse oblique The spermatic cord is drawn down and the pillars of the external and transverse oblique are sutured, leaving only space for the cord, to the lower wall of the inguinal canal, and the slit in the external oblique is then sutured —*Cbl f Chir* , May 14

In Operating Prolapsus, Saenger and Hegar both observe the following points 1, very extensive denuded surfaces , 2, very exact, close stitches , 3, no catgut , Saenger uses fine silk and Hegar silver wire , 4, excisio colli alta the sole operation on the uterus, as they consider ventrofixation entirely unnecessary, except with total prolapsus , 5, extreme care in details and time devoted to the operation, Saenger with all his dexterity, requiring three hours The most scrupulous asepsis is a matter of course, and the patients are only anesthetized at the close, during the work on the peritoneum —*Deutsche Med Woch* , May 19

Osteomalacia.—Latzko has observed 120 cases and notes the diagnostic signs of sensitiveness to pressure of certain points of the skeleton, especially the pelvis and ribs, isolated paresis of the iliac psoas, contractions of the adducting muscles with impossibility to abduct the limbs, also exaggeration of the rotulian reflexes and absence of sensory disturbances He has found phosphorus fully effective as castration in over 100 cases, and ascribes the failures of others with it to the fact that the doses were too small. He commences with one teaspoon a day of a solution of 6 centigrams of phosphorus in 100 grams cod liver oil, increasing to eight or ten The patient thus receives 4 to 6 milligrams of phosphorus a day If there is no improvement in two or three months, the patient should be transferred to the hospital for better hygienic surroundings If this also fails, then castration is indicated —*Semaine Méd* , May 14

The Permanency of Cure after Ablation of Cancerous Tumors has acquired new interest since the publication of Schuchardt's case in which some of the probably affected glands, difficult of access during the laparotomy, were purposely left, to shorten the operation, although one of the neighboring glands examined by the microscope confirmed the diagnosis The patient died some time after the operation and no cancerous glands were found at the necropsy The question now is whether the laparotomy affected the cancer favorably as it does tuberculosis A. Fraenkel thinks that permanent cures are more frequent than supposed, but Albert prefers the term "late relapses," observing that recurrences may develop as late as ten years afterward Hochenegg states that out of 104 cancers of the rectum he has operated since 1887, forty six are free from recurrences to date, one eleven years A number of cases have been reported operated thirteen, eleven, eight and five years without recurrence A recent discussion of the subject at Vienna concluded by urging operators to note whether the principle of "extensive regional ablation" is imperative in stomach, intestine, tongue and lip carcinoma, judged by the ultimate results, and what effect it has on remote metastases

An Aseptic and Cosmetic Suture without a trace of the stitches is obtained by inserting the curved needle under the outer layer of the skin, first on one side and then on the other, and bringing it out at the extreme tip of the wound, fastening each end of the thread over a roll of gauze, after pulling it taut This percutaneous suture ensures an absolute linear scar To remove the thread pull hard on one end and cut it close to the skin The rest is then easily pulled out at the other end, without carrying any germs from outside into the tissues Each curved stitch should include a little larger space than the corresponding open space opposite —*Münch Med Woch* , May 24

Permanent Drainage of Ascites is secured, by Prof P Fürbringer, by inserting the fenestrated end of a rubber tube fifty centimeters in length, inside a canula into the peritoneal cavity The canula is then withdrawn and the tube fastened with a thread passing through the wall of the drain While the fluid is draining out a small antiseptic dressing is applied around the point were it enters, and held with a circular bandage When the fluid is evacuated the tube is closed with forceps where it emerges, the outer end rinsed with an antiseptic solution and then coiled and held in place with cords of tarletan Whenever the ascitic fluid has collected again, the forceps are removed, the tube uncoiled and drainage re established —*Semaine Méd* , May 25

Chloroform Anesthesia—Groube has observed 40,000 cases of chloroform anesthesia, from 1851 to 1896, with three deaths Examination of the urine before and after anesthesia showed that the chloroform does not affect the kidneys except in cases that have previously been chloroformed several times He considers physiologic salt solution by far the best stimulant for the heart, denouncing alcohol and other carbohydrates on account of their depressing action Asphyxia was threatened in 5 per cent., relieved by a few manipulations for artificial respiration after removing the mucus accumulations Vomiting was observed in 20 per cent. , ice was given in obstinate cases , bouillon and coffee only subdue the vomiting when they are very cold or very hot. He considers morphin useless in connection with chloroform anesthesia —*Presse Méd* , May 21

Anchylostomiasis is frequent in the coal mines of Hungary A physician at Brennberg reports 470 cases observed He found santonin ineffectual, but ten grams of thymol a day resulted in the final expulsion of all traces of the parasite in four to six weeks He usually administered extr filic mar æth. in gelatin capsules, as much as fifteen grams in three hours, preceded by 0 4 gram calomel Arsenic and iron for the pronounced anemia The subjective disturbances were exhaustion, weekness below the knees, palpitations, dyspnea, buzzing in the ears, salivation etc.—*Wien klin Woch* , 1898, 19

Ovarian Therapeutics—Vigier has applied to ovarian substance the same process he has found so effective with thyroid tissue , after freeing the organ from all foreign substances, fibers, fat, etc., he mashes and mixes it with sodium bicarbonate and charcoal, which preserve it indefinitely without interfering with its therapeutic effect Two to six capsules a day, each containing 0 20 gram have been found extremely effective in the troubles of the menopause —*Gaz Méd de Liège,* May 19

Arsenic Iodid in Scrofula has been found extremely effective by R St Philippe during the last three years in cases of chronic eczema, inflammation of the eyes, intestinal catarrh and other manifestations of "scrofula " In some cases the results were marvelous Five to twenty drops a day of a 1 per cent solution of arsenic iodid were administered, with no local treatment except rinsing with boiled water The drug must be dissolved in cold water, and if symptoms of intolerance appear, suspended for a few days and resumed with smaller doses —*Bull de l'Acad de Méd* , April 19

Prophylaxis of Movable Kidney—Keller considers pregnancy unfavorable to the development of this condition, but after delivery everything tends to produce it He advises, as prophylactic measures, the wearing of a belt tighter above than below, remaining in bed at least three weeks, not sitting up before the seventeenth day, and resorting to the sound rather than allowing efforts during urination A belt should be worn during pregnancy if the abdomen is very much stretched and at least six weeks after delivery Pads are useless, but very thin women may be benefited by a bandage with spring plates The effect of nephrorrhaphy is too often transient for it to be recommended Nephrectomy is the last resource —*Monatss f Geb u Gyn* , 1898, January

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SATURDAY, JULY 9, 1898

THE PROGRESS OF ARMY MEDICAL ORGANIZATION

During the past month the organization for field service of the medical department of the various regiments aggregated in the camps of instruction at Chickamauga Park, Georgia, Tampa and Jeffersonville, Florida, and Camp Alger near Washington, D C, has been progressing on lines indicated by the surgeon general and the chief surgeon of the army in the field The latter officer, Colonel CHARLES R GREENLEAF, Asistant Surgeon-General U S Army, made an estimate of the medical and hospital personnel of an army corps for the guidance of chief surgeons in the organization of their field hospitals and hospital corps companies In this estimate an army corps was assumed to consist of 24 regiments of infantry, 3 light batteries of artillery and 1 regiment of cavalry organized in 3 divisions of 3 brigades each, and that to man this command medically there should be in accordance with existing laws and orders, a total of 89 medical officers, 83 hospital stewards, 29 acting hospital stewards and 817 privates of the hospital corps To organize for field service, each regiment of infantry would have assigned for service with it 1 medical officer, 1 hospital steward and 1 mounted orderly, the battalion of 3 light batteries of artillery 1 medical officer, 3 acting hospital stewards and 1 mounted orderly, and the regiment of cavalry 2 medical officers, 1 hospital steward and 2 mounted orderlies For administrative purposes at headquarters of corps, divisions and brigades At corps headquarters 2 medical officers, 2 mounted orderlies and 1 hospital steward, at the headquarters of each division 1 medical officer, 1 hospital steward and 1 mounted orderly, and at the headquarters of each brigade 1 medical officer and 1 mounted orderly For each of four ambulance companies, one to serve with each division and one to be held as a reserve, 6 medical officers, 7 hospital stewards, 3 acting hospital stewards and 104 privates of the hospital corps, and for each of four field hospitals, of 200 beds each, one to serve with each division and one to be held in reserve, 6 medical officers, 6 hospital stewards, 3 acting hospital stewards and 90 privates of the hospital corps The assignments of the medical force of the army corps would thus be

	Medical officers	Hospital stewards	Acting hosp stewards	Privates of hosp corps
On duty with regiments, batteries, etc	27	25	3	27
On staff or administrative service	14	4		14
With ambulance companies	24	28	12	416
With field hospitals	21	21	12	360
Unassigned		2	2	
Total	89	83	29	817

The difficulties encountered in effecting this organization have been due to opposition on the part of regimental officers, medical and line, to the breaking up of the regimental hospital which they have been accustomed to regard as an essential part of the regimental constitution Chief surgeons were handicapped also by the dislike of volunteer soldiers to offer themselves for transfer into the hospital corps of the regular army A third difficulty was found in the changes taking place in the composition of divisions as one or more regiments were sent from one command to another, from Chickamauga, for instance, to Tampa When the medical department of a division is well organized and its members familiar with their work it is a simple matter to detach with one or two regiments an appropriate share of medical and hospital supplies and to adjust the duties of the remaining officers and men to the new conditions, but occurring frequently in the progress of organization such changes retard the work and increase materially the labors of the medical officers in charge

RED TAPE

Officers of the Volunteer Army are prone to consider as needlessly strict and formal many of the requirements of Army Regulations, particularly those relating to reports, returns and other so called paperwork, and to make use of the term, red-tape, as embodying their opinion of all such requirements and as accounting for and excusing any ignorance of the subject on the part of those who, like themselves, have volunteered for the intensely practical work of grim-visaged war But no business can be managed successfully without attending to the accounts Even the small affairs of the family circle involve a certain amount of orders, memoranda and bookkeeping to house, feed and clothe the members of the family and have the various bills settled at the end of the month The company is the military family, and if its head, the company commander, fail to keep proper account of the pay due [illegible] if he inform himself of the regulation methods of providing them with food, clothing, arms, equipments, etc, or to turn this information to practical account, his men will suffer, for, as in military life, it is expected that every one should know his duty and do it, there is no provision by which the men of a command can be cared for when its own commander fails to do so

Medical officers are in a great measure relieved from duties of this kind The number who have to care for soldiers of the hospital corps is very small They are the officers in charge of hospitals and of hospital corps companies Regimental medical officers have with them on field service only a hospital steward and a mounted orderly, and these men are attached to some company of the regiment for rations and are borne on the rolls and returns of the field hospital or ambulance company for muster, pay and clothing Regimental medical officers have been relieved from cares of this kind that they may be able to devote all their attention to the keeping of accurate medical records of their regiments In every case of serious sickness, death or discharge for disability every important detail should be entered on the register of patients Indeed the case of every man who is treated on account of accident or sickness should be entered on this register, which is practically a retained copy of the regulation monthly report of sick and wounded The calls made by chief surgeons for care in filling out the columns of this report are regarded as red-tape by some medical officers who consider that their duty is the practical one of caring for sick and wounded men, and that if this is done conscientiously it matters little whether or not any written record of the cases be made They overlook the fact that this monthly report of sick and wounded when filed in the War Department will constitute the only medical evidence on which hereafter claims for pension will be decided In this lies its importance The medical records of the early months of the Civil War were very defective and great injustice both to individuals and to the Government was undoubtedly caused thereby The Medical Department at the present time should profit by the experience of the past and should put as much energy into its methods as will ensure the rendition of accurate reports from every volunteer command

THE HEALTH OF SANTIAGO DE CUBA

We learn that during the past ten years there have been two epidemic visitations of yellow fever in Santiago and its neighborhood, with cases scattered in the intervening years, so that the infection of the fever must be considered to be there and ready at any time, under favorable conditions, to cause an outbreak among our unacclimated men when they leave the mountains and enter the city In November, 1890, after a period of freedom from fever the disease was introduced into Santiago and its vicinity by workmen from Spain who had been ashore for some days at Porto Rico while *en route* to Cuba Yellow fever was then prevailing at Porto Rico and some of the Spanish emigrants became infected These settled in Santiago and introduced yellow fever among the people employed at the Juragua Iron Works The disease prevailed at these works for twelve months, attaining its maximum in June, 1891, during which month there were 57 cases, of which 21 were fatal, among the 1300 people in the employ of the Iron Company During the twelve months the epidemic gave a sum of about 265 cases, of which 100 were fatal A few cases occurred in the winter of 1892-93 and again in the winter months of 1894, but in July, 1895, something like an epidemic was again lighted up, lasting until November and giving 107 cases, or which 47 were fatal The disease prevailed at these periods among the population of Santiago Since then only sporadic cases have occurred

THE SKIN AFFECTIONS OF TYPHOID FEVER

In a disease so prevalent and wide spread as typhoid, necessarily lesions of any and all systems occur, some of which may be regarded as accidental and casual, while others from the comparative frequency with which they exist must be looked upon as in the nature of complications Indeed, a third class may be added, that of intercurrent affections, those diseases which might with great probability never have occurred had not the resisting power of the economy become so impaired by the ravages of the disease that ready entrance is allowed to the specific organisms of other affections, which in a healthy state of the body could not have obtained a foothold Of these germs streptococci, staphylococci and pneumococci, play a leading part, they also contribute largely to what might be called the complications proper, while late reports show that the typhoid bacillus itself is amply able to produce some of the most important complications of the disease, as in the cases of OHLMACHER, in which he isolated this germ in two cases of meningitis ("Clinical and Pathologic Features of Two Cases of Typhoid Meningitis," by O P OHLMACHER The *Cleveland Medical Gazette*, May, 1897) As regards the dual role of the pus organisms, especially the streptococci, they now produce an attack of erysipelas, an intercurrent affection, now occur in suppurative parotitis and other abscess formations, complications It is sometimes difficult to say whether pneumonia acts as an intercurrent disease or as a complication, but the endo and pericarditis occurring in typhoid and pneumo typhoid so-called, are complications

The skin, from its very office of protector and from its exposed situation, is especially liable to disease, and the lowered vitality of the body in typhoid does not tend to diminish this danger, the integrity of the appendages of the skin becomes still more jeopardized because of correspondingly greater impairment of nutrition To the student of typhoid, the most important skin lesion, both on account of its frequency and its diagnostic value, is the eruption of the rose colored, lenticular spots, papular elevations, usually situated upon the abdomen, though they may be found on any part of the trunk and even on the face and extremities, occurring as a rule in suddenly appearing crops which, lasting a few days, gradually disappear, leaving brownish stains, occasionally they become capped by a small vesicle, but even in the malignant cases rarely if ever become pustular, indeed, in the malignant cases they are more likely to be the subjects of hemorrhage, forming the so called petechiæ They rarely exceed four millimeters in size and disappear readily on pressure, only quickly to reappear when the pressure is removed

In cases which perspire considerably, especially those cases in which the coal-tar antipyretics have been given and even sometimes after the bath, miliary vesicles or sudamina are often present, particularly on the chest and abdomen With the establishment of convalescence these disappear, and where they have been abundant, a branny desquamation not unlike that of measles often follows

Any one who has seen considerable of hospital practice has doubtless noted the frequency with which steel gray or more often pale blue spots are seen beneath the skin of the abdomen, chest, and particularly the thighs These peliomata, as they are called, are not confined to typhoid, are usually somewhat irregular in outline, are larger than the rose spots, do not disappear on pressure, often cause the victim to irritate them by scratching, and are undoubtedly due to the presence of pediculi

During the early stages of the disease, and especially if any of the coal-tars or quinin have been administered, an erythematous rash may appear, first on the chest as a rule, usually extending from there all over the body with the exception of the hands and face This rash occurs with considerable frequency, rather more so than either urticaria or herpes, neither of which are by any means uncommon GILMAN THOMPSON, in his report of "Unusual Complications of Enteric Fever" ("Medical and Surgical Report of the Presbyterian Hospital in the City of New York," 1898), speaks of two skin lesions, purpura hemorrhagica and papular eczema He reports a case of the former at some length after giving a typic history of typhoid infection "On examination he appeared neither anemic nor emaciated The temperature was 104, pulse, 90, respiration, normal The Widal reaction was obtained The urine was normal The skin was somewhat hyperemic, and a number of typic enteric spots were present upon the abdomen, lower chest and arms The spleen was barely palpable, and the liver appeared an inch below the costal margin No other visceral abnormalities were discoverable There was moderate alcoholic tremor Two days after admission severe epistaxis returned, which the house physician was only partially able to control by plugging and the use of styptics At this time a number of small hemorrhagic spots appeared, scattered over the back and upon the left forearm The dejecta were slightly streaked with blood During the next three days the patient became excessively weak from loss of blood and during the period from the ninth to the twentieth day of the disease, he showed no improvement The temperature rose to 105 6 and remained steadily high (104 5) The urine became hemorrhagic, showing red blood cells, hemoglobin, leucocytes, hyaline casts and albumin, 35 per cent by volume Well-marked Ehrlich reaction was present Subconjunctival hemorrhage took place in the left eye, and the ecchymoses became abundant over the chest, abdomen and extremities They were also observed on the buccal mucous membrane The tongue became dry and fissured, there was bleeding from the gums and the breath was foul During the fourth week of the disease there was no increase in the purpuric spots, many of which began to fade, but the other symptoms continued with occasional attacks of epistaxis Slight hemorrhage also occurred from the left ear During the fifth and sixth weeks slight improvement gradually supervened, the urine became less hemorrhagic, epistaxis ceased, and on the forty-second day of the disease, the morning temperature reached the normal for the first time "

Of other lesions of the skin, not eruptive in character, one of the most common is edema This may result from a variety of causes, as thrombosis of a vein (especially the femoral), as a sequence of nephritis, but most commonly in the lower extremities, due to the cachexia and emaciation produced by the disease In the latter instance the edema is most apt to manifest itself when the patient begins to walk around, and indeed almost every case of severe typhoid is more or less subject during convalescence to this annoyance Even the laity are familiar with the frequency with which alopecia occurs in this disease, and they are likewise imbued with the hope that their hair will "grow in curly " Occasionally permanent baldness results, but the instances are very rare Of the other appendages of the skin, the nails also suffer from lack of nutrition, and one can often make the diagnosis that a patient has been suffering from some prolonged illness, presumably typhoid, by transverse ridges appearing on the nails several weeks after convalescence has become established

The skin phenomena occurring as a result of nervous influence brings us toward the end of our subject The vaso motor phenomenon known as the *tache cérébrale*, produced by run [illegible] dly over the skin, when a red line w [illegible] ries is formed, is not peculiar to [illegible] sent in any fever Exposure of the skin of any part of the body which has been or is usually covered, often causes in nervous subjects a pinkish injection of the skin of the exposed parts This is commonly seen when the attending physician draws down the bed clothes in his examination for spots or enlarged spleen As a sequel of typhoid, a lesion has often been observed, and in males as well as females, of the *lineæ atrophicæ*, usually known in obstetric practice as the "silver lines of pregnancy" These whitish streaks, occurring for the most part on the abdomen and hips, are undoubtedly due to neuritis

Other diseases, intercurrent in character, may occur and produce skin eruptions of their own Erysipelas may coexist with typhoid or be induced by the lowered vitality produced by the latter and gangrene may be superinduced as the result of pressure This gangrene is usually of the moist variety, and may manifest itself in one or both legs, or over the lower part of the spine (as a bed sore), or in the cheek as a gangrenous stomatitis or noma Indeed, noma follows typhoid more frequently than any other disease, unless it be measles

PREMATURE OLD AGE HOW TO AVOID IT

A long life is variously valued by different individuals, but the great majority will without question accept it as a desirable acquisition The ones who would theoretically disclaim any desire for length of days would in many cases exhibit the same objections to an early death or even one at any time, as those who honestly admit their preference for life even at the expense of the disagreeable possibilities of old age The instinct of self preservation, the clinging to life, is a safeguard of the race and it is to be hoped at least that it may never be a less prominent characteristic of mankind than it is at the present time Old age is inconvenient, in some respects unattractive, and it is certainly a matter of expense to care for those who are past the productive period of their lives and who have not the excuse for their existence of the equally unproductive infant, that their term of usefulness is still to come Nevertheless none of us who have a properly constituted disposition would wish matters otherwise than they are or care to lose prematurely, even for a moment, those who have passed the meridian and are now on the downward grade of life, however unproductive or burdensome they may be There is a credit to their account in our social bank for past services which we can not ignore

While old age is honorable and its infirmities are to be respected, it is not desirable nor, in a medical point of view, the proper thing for them to appear before their time Premature old age means that the individuals or their ancestors, it may be back to the third or fourth generation, have sinned against their physical welfare and are reaping the reward While the most of us are probably more or less handicapped by heredity, it is well to know how to avoid the evil effects of a bad inheritance and to so train up the mature man in the way he should go that when he is old he will still have as few of the drawbacks of senility as is possible, and above all that he may not acquire these out of due time This avoidance of premature old age forms the subject of a very readable and instructive article by Dr Hermann Weber in a new publication, the *Zeitschrift für diätetische und physikalische Therapie*, the first issue of which has just appeared, an article which would be well worthy a wider circulation than it is likely to have in a special German medical magazine It would be impossible to abstract it here fully, but one or two of the points made by the author can be mentioned It is well known that the chief cause of senile failure is to be sought in the circulation, the nutrition of the brain and nervous system suffer from the incapacity of the heart and the rigidity and narrowing of the vessels through atheromatous and other allied conditions If the finer vessels of the brain lose to any extent their facility of functioning, their elasticity, then the nerve cells suffer, both those of the cortex and the basal ganglia To a lesser extent this same is true as regards the minute vessels of the heart itself and of the stomach in their action in bringing on the changes characteristic of senility, the disturbances of the functions of the heart itself are the causes of secondary lesions elsewhere, and the importance of the normal functions of the digestive and the excretory organs needs no extended elucidation The causes of the early appearance of these vascular changes themselves are the important element of the question, and Dr Weber's views on this point are well worthy of notice According to him, the chief producers of these vascular degenerations are over-nutrition, inactivity both of mind and body, too much sleep, and not infrequently with these we find alcoholic excess and immoderate use of tobacco A too engrossing and monotonous occupation and emotional depression of any kind may also have its share Over-feeding and inactivity are generally recognized causes of physical degeneracy, but it has not been so common to attribute to over-sleeping the importance here given it His view that for most people over the age of fifty, six or seven hours of sleep is an ample allowance may not be in accord with the preconceptions of many, but it has a certain reasonableness The fact that in all probability there is a more sluggish cerebral circulation and more opportunity for stasis and obstruction is in its favor Wakefulness has been reckoned as an indication of senility, but according to this theory it is a conservative symptom and encouraging rather than otherwise As Dr Weber says, it is difficult to lay down rules in a matter in which there are so many and so wide individual differences, and there are many conditions in which abundant sleep is beneficial, yet, for the majority of healthy and especially of elderly individuals, temperance in sleep is as important as that in other restoratives and sedatives

Another important matter, but one that has less apparent novelty, is the need of mental and bodily activity for warding off the symptoms of premature senility The instances of extreme longevity are, it is true, to a large extent those who have led a simple quiet life, apparently without startling vicissitudes or excessive bodily or mental exertion But with these we have abundant examples of active intellectual work carried on in extreme old age, and on the other hand we have every day instances of rapid failure after the cessation of regular accustomed employment While the bodily powers lessen to some extent with age and require some modification of the activities, any sudden interruption or diminution of them may be disastrous The recommendation that every man should have some hobby or side issue of interest is not a bad one, and may maintain the zest of life when the regular occupations are laid aside

A happy and hopeful disposition, it goes without saying, is a wonderful aid in warding off and tempering the discomforts of old age The use of alcohol in moderation is commonly thought to be beneficial in the aged, and St PAUL'S recommendation of a little wine for the "often infirmities" is frequently repeated by the laity and endorsed by the physician Dr WEBER does not endorse this view, wine, in his opinion, is not *die Milch der Greise*, and is not effective in staving off the weaknesses and defects of advancing years

With all our much discussed degeneracy of modern times, man is now a longer-lived animal than were his forefathers, though the evidence of this is perhaps more apparent in actuaries' tables than in striking individual cases What we need now, as at all times, is more popular enlightenment in regard to the important hygienic question of how to meet the inevitable downward stage of life, to mitigate its necessary disadvantages and to avoid those that can be spared us We ought all to know how to grow old becomingly and comfortably, with this knowledge, practically applied, the extension of life will be in every way more desirable and endurable

DESPONDENT OUTLOOK FOR SPAIN AND OTHER LATIN PEOPLES OF EUROPE

Dr GUIDO BACCELLI of Rome, who was president of the Eleventh International Medical Congress, and who has been called the Italian Virchow, has made known certain pessimistic views of the Spanish trouble He thinks Americans are more to be dreaded by the Latin nations than the Chinese The yellow races, he thinks, no longer menace Europe, but there is actual menace from the United States, "where the expanding, absorbing Anglo Saxon or cosmopolitan energy must grow and spread and ultimately overwhelm that part of European civilization which it does not renew War with Spain is the beginning Afterward it will be a mere question of the "survival of the fittest" In other words the humanitarian instincts and voice of the northern races must be listened to and taken into the account by the more heartless and tyrranous people of the south of Europe,—and in the name of sweet charity is it not about time that a new leaf should be turned? Americans are not anxious for territorial aggrandizement, but it is due from us to those countries that may come to us by conquest, that their kind of government shall cease to be of the Spanish variety And further, when the Latin peoples are entirely ready for arbitration instead of war as the standard method of settling international troubles, they will find in the United States a hearty friend of peaceful measures We do not love war, the destructive arts have been cultivated far less than the constructive ones, so that some of our good friends across the water have actually fallen into the belief that any old nation might bite its thumb at us with impunity As ARTEMUS WARD might have expressed it, "Arbitration is the *best holt* of the alleged decadent Latin peoples of Europe," and the same may be said on behalf of the peoples that are coming strongly to the front

But there must first be an end of Spanish arrogance, bluster, insufferable assumption, sanitary crimes and unspeakable cruelties Pending the general adoption of the wholesome principle of arbitration as a means of settlement of international difficulties, we rely on the persuasive cannon of DEWEY, SCHLEY, MILES and SHAFTER to teach the Spaniard his unwelcome lesson

CORRESPONDENCE

WAR CORRESPONDENCE

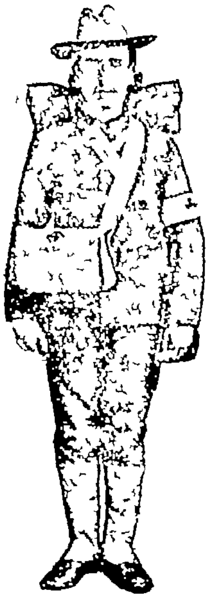
BY LIEUT -COL. NICHOLAS SENN, U S VOLS ,

CHIEF OF OPERATING STAFF WITH TROOPS IN THE FIELD

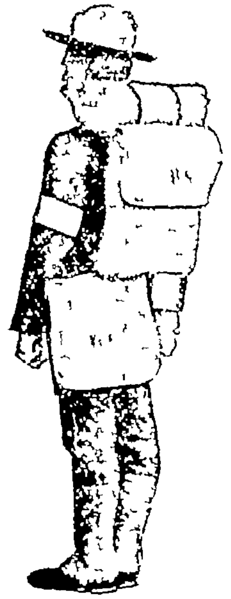
War always has been and always will be a cruel thing The very object of war is to kill, disable, maim and starve until the result of the contest shall decide the issue by demonstrating the superiority of one army over the other in number, courage or skill of warfare "The battle is the Lord's," but victory is not always on the side of justice The Lord teaches, rules and benefits the children of men now, as during the time of the prophets, as often by defeat as victory The God of battles has ways and means often impossible to comprehend, but they always lead to results beneficial to mankind The terrors and sufferings of war are the prices paid for defeat as well as victory The wonderful improvements made in weapons and projectiles during the last quarter of a century have made modern warfare more destructive if not less cruel It is difficult to foretell the relative number of dead and wounded in the engagements of the future Reliable information on the subject must come from actual observation on a large scale on the battlefield and not from the results of experiments on the lower animals and the cadaver Warfare has become a science and an art, and victory will depend as much on the skill and foresight in strategy of the commanding officers as the endurance and valor of the troops The long range rifles and the better marksmanship of the average soldier will increase the distance between the fighting lines and give the commanding officers better opportunities for the exercise of their skill in maneuvering the troops In every respect war will and must assume more scientific aspects for the display of skill What the improvements will be can only be determined by experience on a large scale The rapid mobilization of troops, supply of ammunition along the line of battle, flank movements, the quick digging of shallow entrenchments for the protection of the soldiers in line of battle, are some of the important subjects which are engaging the minds of our wide awake military officers and which await a satisfactory solution by as yet an unknown second Napoleon Let us hope that this important person is now in existence, an American citizen and now engaged in the present war with Spain

HOSPITAL CORPS

The humane side of the present methods of warfare is best shown by the organization of an efficient hospital and ambulance corps The sick and wounded of the great war of the rebellion suffered indescribable pain and agony owing to inadequate provisions for transportation, first aid and nursing by men detailed for this special purpose Our sick and wounded can look forward more hopefully for more prompt and efficient treatment. The Government, through the Surgeon General and Secretary of War, is making ample preparations for the prompt and efficient treatment of those requiring medical or surgical aid The prevention of disease by the employment of improved hygienic and sanitary measures will do much in minimizing the number of ignominious deaths in the field and general hospitals and in maintaining the full fighting force The need of a well organized and well equipped hospital corps became apparent during our late war, but it was many years after the Union was restored before the necessary legislation was effected which brought it into existence The Hospital Corps in the United States Army was created by an act of Congress approved March 1 1887



Private hospital corps U S Army field equipment (front view)



Private hospital corps U S Army, field equipment (rear view)

The law under which the Hospital Corps was established and as revised by March 16, 1895, and March 16, 1896, reads as follows

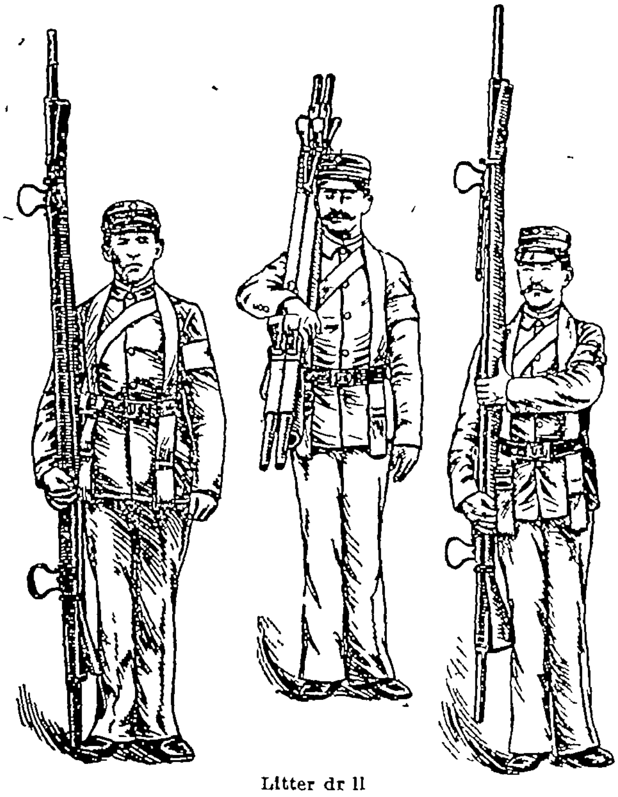
(The Military Laws of the United States 1897)

"673 That the Hospital Corps of the United States Army shall consist of hospital stewards acting hospital stewards and privates, and all necessary hospital services in garrison, camp or field (including ambulance service) shall be performed by the members thereof, who shall be regularly enlisted in the military service Said Corps shall be permanently attached to the Medical Department, and shall not be included in the effective strength of the Army nor counted as a part of the enlisted force provided by law

"674 That the Secretary of War is empowered to appoint as many hospital stewards as, in his judgment, the service may require, but not more than one hospital steward shall be stationed at any port or place without special authority of the Secretary of War That there shall be no appointments of hospital stewards until the number of hospital stewards shall be reduced below one hundred, and thereafter the number of such officers shall not exceed one hundred

"675 That the pay of the hospital stewards shall be forty five dollars per month, with the increase on account of length of service as is now, or may hereafter be allowed, by length of service as is now or may hereafter be allowed by law, to other enlisted men They shall have rank with ordnance sergeants and be entitled to all the allowances appertaining to that grade

"676 That no person shall be appointed a hospital steward unless he shall have passed a satisfactory examination before a board of one or more medical officers as to his qualification for the position, and demonstrated his fitness therefor by service of not less than twelve months as acting hospital steward, and no person shall be designated for such examination except by written authority of the Surgeon General



Litter drill

"677 That the Secretary of War is empowered to enlist or cause to be enlisted, as many privates of the Hospital Corps as the service may require, and to limit or fix the number, and make such regulations for their government as may be necessary, and any enlisted man in the army shall be eligible for transfer to the Hospital Corps as a private They shall perform duty as wardmasters cooks, nurses, and attendants in hospital, and as stretcher bearers, litter bearers and ambulance attendants in the field, and such other duties as may by proper authority be required of them

"678 That the pay of privates of the Hospital Corps shall be eighteen dollars per month, with the increase on account of length of service as is now or may be hereafter allowed by law to other enlisted men, they shall be entitled to the same allowances as a corporal of the arm of service with which on duty

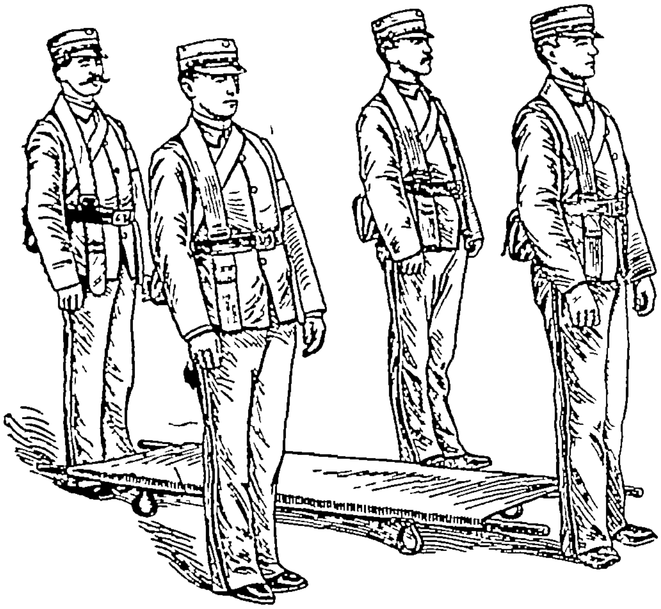
"679 That privates of the Hospital Corps may be detailed as acting hospital stewards by the Secretary of War upon the recommendation of the Surgeon General whenever the necessities of the service require it, and while so detailed their pay shall be twenty-five dollars per month, with increase as above stated Acting hospital stewards, when educated in the duties of the position, may be eligible for examination for appointment as hospital stewards as above provided "

Since the original law providing for a hospital corps was passed many new features have been added which have made this branch of the military service more efficient

The pay of members of the Hospital Corps is according to grade, as follows per month Hospital steward, $45, acting hospital steward, $25, private, $18

To the rates of pay enumerated above 20 per cent is added in time of war

During the present war the commander of an army corps, or of a division, or of a brigade acting independently of a corps, has full control of enlistments for the Hospital Corps within his command, and of the detail of acting hospital stewards and the appointment of hospital stewards The Hospital Corps force of the present war is made up three per cent of the privates obtained by special enlistment or transfer from the line, that is, a regiment of 1000 men is entitled to 30 men for the Hospital Corps The allowance for horses, wheel transportation and tentage is ample, as will be seen from the following order recently issued by the War Department



Litter drill

GENERAL ORDERS }
No 76 }

HEADQUARTERS OF THE ARMY
ADJUTANT GENERAL S OFFICE
WASHINGTON, June 22 1898

I —By direction of the Secretary of War the following allowance of horses for mounts, wheel transportation, tentage etc , for the Medical Department of the Army in the field is authorized

HORSES FOR MOUNTS

	Hospital stewards	Acting hospital stewards	Privates
To each regiment of infantry	1		1
To each artillery battalion (3 light batteries)		8	1
To each cavalry regiment	1		2
To each corps headquarters	1		2
To each division headquarters	1		1
To each brigade headquarters	1		1
To each division ambulance company	7	3	12
To each corps reserve ambulance company	7	3	12
To each division field hospital	2	2	6
To each corps reserve hospital	2	2	6

Wheel transportation —One ambulance to 400 men of the effective force One 4 horse wagon to 600 men of the effective force One 4 horse wagon to each brigade

Tentage —For each ambulance company 17 common tents for privates 2 common tents for noncommissioned officers For each division field hospital 15 common tents for privates, 2 common tents for noncommissioned officers 1 common tent for supplies Hospital tents on a basis of 6 patients (beds) to each tent Hand litters, with slings to be furnished by the Quartermaster s Department 1 for each company, 2 for each ambulance

Requisitions for the necessary articles of camp and garrison equipage tools etc , will be based on the official allowances for companies of infantry

Requisitions for the before mentioned supplies will be sent in separately for *divisions* with statement whether or not the division organization is complete

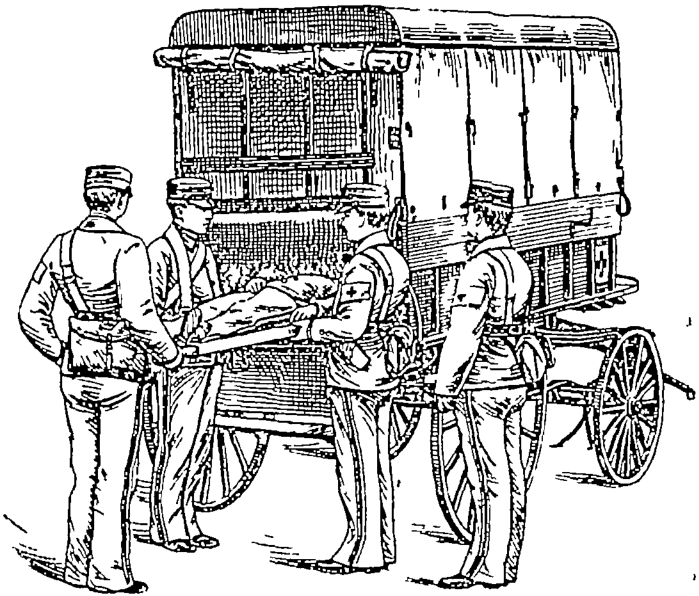
Horses and wheel transportation will be furnished by the Quartermaster s Department and horse equipments by the Ordnance Department

II —Commanding Generals of Army Corps are directed to detail, upon the application of Chief Surgeons of Corps, two officers not above the grade of first lieutenant for duty as Acting Assistant Quartermasters with the medical service of each division

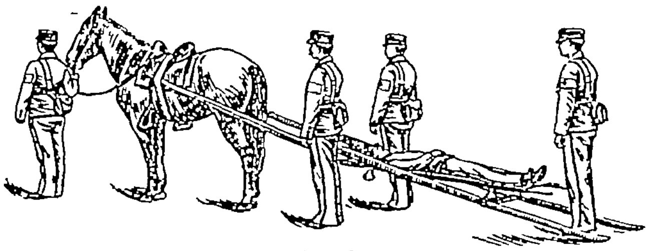
BY COMMAND OF MAJOR GENERAL MILES

H C CORBIN,
Adjutant General

As usual, many difficulties have presented themselves in the way of securing the necessary material both in quantity and quality, for the Hospital Corps during the present campaign The commanding officers are always averse to lose the most desirable men of the line I have reason to believe that at the present time the importance of a good Hospital Corps is appreciated more than ever by the commanding officers The field officers have co operated with the corps surgeons in the selection of the best men for this special service The work of organization has progressed slowly, but on the whole in a satisfactory manner The enormous demand for equipments and the sudden mobilization of troops have contributed much in retarding the organization and instruction of the Hospital Corps The designation of the Corps as a Hospital Corps does not convey the proper meaning of the manifold purposes for which the men are enlisted and transferred, and has been the means of misleading many a patriotic doctor and medical student now engaged in this branch of military service Many complaints are heard because instead of doing hospital duty proper the men are made to cook, drive ambulances, chop wood, dig sinks and haul water There are today too many doctors and medical students in the Hospital Corps The duties of the Hospital Corps are manifold, and in their proper discharge requires more skilled artisans than medical men A good Hospital Corps should consist largely of young, bright, intelligent, robust men skilled as carpenters, cooks, blacksmiths, stenographers, photographers, ambulance drivers, tailors, shoemakers and other trades Doctors and medical students should be in the minority, and ought not to exceed twenty five per cent of the non combatant force If the legitimate function of



Ambulance in use



Travois

the Hospital Corps were better understood there would be fewer applications for this service on the part of professional men. The general impression prevails that the duties of the members of the Hospital Corps are less onerous than those of the private soldier of the line It is difficult to conceive how such an idea could have originated It is also understood that the non combatant soldier is exposed to less risk of life than his comrade of the line, when the fact is apparent that in addition to the ordinary dangers incident to warfare, he is more exposed to the greatest source of danger—disease The nursing in the field hospital is done exclusively by the Hospital Corps men, and involves much loss of sleep and constant care and attention The transportation of sick and wounded is a task requiring good judgment, promptitude and care A combination of firmness and gentleness thoughtfulness of action and a determination to perform duty regardless of rest and comfort, is an essential element of success in the work of every Hospital Corps man The climatic influence, the prevalence of tropical diseases will tax to the utmost the resources of the Hospital Corps during the present war with Spain That the work will be well and cheerfully done I have no doubt, judging from my observations during the last two months

The American people expect that the sick and wounded of this war shall receive the best possible attention, and in this they will not be disappointed The Government, although sometimes necessarily tardy, is willing and anxious to do all in its power to alleviate the horrors of this war, and in this humane intention it will receive the hearty co operation of the Hospital Corps The writer has been permanently detached from the Sixth Army Corps now at Chickamauga by a recent order, and is now on his way to Santiago de Cuba on special duty He goes to the front as Chief of the Operating Staff with the troops in the field. For the purpose of informing my many friends among your readers what I am expected to do, I append a copy of the letter assigning me to my new field of labor

HEADQUARTERS OF THE ARMY
Washington, D C, June 29, 1898

Lieutenant-Colonel Nicholas Senn, U S V, Chief of the Operating Staff

Sir—In assigning you as Chief of the Operating Staff, the Major General Commanding the Army directs me to say that, at the several points to which you may be assigned to duty, you will confer with the Chief Surgeon of the Corps engaged as to the means by which you may consult with and advise the medical officers serving with that army regarding the clinical features of their professional work, that you will recommend such methods either by lectures or operative demonstration, as may in your judgment be best suited to accomplishing the purpose in hand, that you will take the necessary steps for collecting data upon which the clinical and pathologic records of the field and hospital service may be classified, and from which the future medical and surgical history of this war may be prepared Your present assignment will be for duty with the Fifth Army Corps, now operating before Santiago de Cuba, and at such future time as the General Commanding may decide, you will be transferred to other points where active military operations are progressing

Very respectfully,
Col Chas R Greenleaf,
Asst. Surg -Genl U S A, Chief Surgeon, Army in the Field

I hope I will reach Santiago before surrrender and enter it with our victorious troops My address for the present will be
Fifth Army Corps, Santiago, Cuba

My next communication will be from the seat of war

Cerebro-Spinal Meningitis--A Correction

Elmdale, Kans, June 28, 1898

To the Editor—An oversight in reading the proof of "Cerebro-Spinal Meningitis" allowed sixth line from bottom, first column, page 1499, Vol xxx, to read "50 per cent" instead of "20 per cent." Very respectfully,

J F Shelley, M.D

The Permanent Secretary Explains

Philadelphia, June 27, 1898

My Dear Dr Hamilton—I have just read your editorial, and feel that it is due to myself to say that at the close of the session on Friday, I was ready to turn over to Mr Whitford the minutes in full, but was compelled to wait the return of the papers containing the resolutions, etc., which were referred to the Business Committee, and reported upon by them on Thursday, but which were retained by the Secretary of that Committee that he might put them in order The enclosed copy of a letter from him received by me on Friday morning will explain why they were not ready then for incorporation in the minutes

Brown Palace Hotel,
Denver, Colo, June 10, 1898

My Dear Dr Atkinson—It has been absolutely impossible for me to write up the records of yesterday in my Executive Committee book, and as I am off today I am taking them all with me to New York. They are all safe and will be sent to you when I return but perhaps not for two weeks or so

If there was anything else referred to the Committee yesterday or today kindly let me have it as soon as possible

I remain, yours truly,
[Signed] L Duncan Bulkley,
Sec'y Executive Com A M A

You see that I am powerless, as it was my duty to give to this Committee all the matters referred to it Nor did I think for one moment that they would not be at once handed to me when the report was made and acted upon by the Association. May I ask the publication of this reply as prominently as your editorial? Yours very truly,

W B Atkinson,
Permanent Secretary

[When the reports on the resolutions were read by Dr Bulkley, they were then the property of the Association, and he had no more right to carry them away than any other member There is no "Executive Committee"—Ed]

Dr Eichberg

Cincinnati, June 29, 1898

To the Editor—Please correct statement of your Cincinnati correspondent, in last issue, that "Dr Jos Eichberg has resigned from Miami Medical College" He has resigned the office of Secretary, but retains his position of Professor of Practice Dr Olive P Holt has been made Secretary of the College Respectfully,

Wm H Taylor, Treas'r M M C

ASSOCIATION NEWS

American Medical Association

Official Minutes of the General Sessions of the Forty ninth Annual Meeting, held in Denver, Colo, June 7, 8, 9 and 10, 1898

(First Gen Session, continued from p 1533, Vol XXX)

Dr Bulkley, Secretary of the Business Committee, read a report of that Committee relative to prize essays, the publication of the Association program and the general sessions The following is the report on the general sessions and Section meetings

Resolved, That the Sections be directed to hold no meetings during the hours set for the transaction of executive business in the general sessions, and that the general sessions take place at 11 A M, instead of 10 A M

Dr Dudley S Reynolds of Louisville—I move that the report of the Business Committee be adopted Seconded

Dr Wm H. Humiston of Cleveland—I object to adopting the resolution with reference to deferring the meeting of the General Session until 11 o'clock It will encroach upon the work of the Sections If the General Session is postponed until 11 o'clock, and then continue until 2 o'clock, which is likely to be the case, we will have practically no time for dinner, and it will interfere materially with the work of the various sections

Dr J B Hamilton of Chicago—I would respectfully dissent from that part of the report which states that the program has not been published as a whole That statement is incorrect, because each Section of the program has been published as received It is not possible to publish them as a whole, because up to the last minute corrections are made which appear in the finished program As these corrections were received not more than ten days before this meeting, how is it possible to print the program as a whole, when we only received the final program from the bindery last Friday?

Dr H M McConnell of Pennsylvania —I move, sir, that we strike out the word *adopt* and insert in its place the word *receive* Seconded

Dr Daniel R Brower of Chicago—I wish to state that if we meet in general session at 11 o'clock, it will give the various Sections two hour s work, namely, from 9 until 11 Furthermore the best material of this convention will be in the Sections (Applause)

Dr Leartus Connor of Detroit—The remarks of the last gentleman meet with my approval It would meet with my approval if these general meetings were never called until 12 o'clock and be closed at 1 (Applause) I submit to the gentlemen present whether the presentation of matters this morning is worth our while to travel a thousand miles to listen to The affairs of this Association should be so conducted that it will pay us to attend the meetings We are here for business, not to hear about the Rush Monument Fund and a lot of other things of which most of us knew before During the reading of these reports we simply go to sleep Some of the members were sleeping around me this morning We are not here to be put to sleep by bad air, or to be shut up in a sweat box over matters in which we have no earthly interest This is the work of committees and for which we appoint them The benefit of these meetings is to be derived from attending and participating in the work of the Sections It is only right that we should all attend these general meetings, and take an active part in the transaction of business, and if we are prompt the business can be transacted in a short time, and it will not burden any of us to do it Those who have the arrangement of the meeting in charge should see to it hereafter that the business of the Association shall be transacted in one hour each day if possible That is all the time we will need if we are prompt in our work Let us have more time for Section work where we have the brains of the Association, and where the enjoyment comes and profit follows In this way we will make the Journal better and our meetings will be meetings of pleasure and of satisfaction to us all Let us encourage all of our friends to come together and join with us to work in the interest of medical science and not listen to a lot of rot (Loud applause)

The motion to receive was put and carried

On motion the Association adjourned until Wednesday, 11 A M

June 8—Second General Session

The Association met at 11 A M , and was called to order by the Second Vice President, Dr J A Thompson of Indianapolis

The minutes of the previous General Session were read by the Permanent Secretary and approved

Dr Graham of Denver made some announcements on behalf of the local Committee of Arrangements

The Fourth Vice President, Dr T J Happel of Tennessee, now took the Chair

Dr Bulkley stated that the Business Committee was unable to present a report upon the President's Address or upon the Rush Monument Committee, but that such report would be presented tomorrow

Regarding the resolution in reference to Associations of the United States, the Business Committee simply reported progress and asked that the matter be referred to the Committee for another year

On motion, the wish of the Committee was granted

The Business Committee recommends for adoption the following resolution, which was sent to them with the endorsement of over twenty members of the Association in order to save time on the floor The resolution is not directed to the Committee, otherwise it would be naturally referred to the Committee

Resolved, That the Sections be directed to hold no meetings during the hours set for the transaction of executive business in General Sessions, and that the General Sessions take place at 11 o'clock instead of 10 after the first day

Dr Bulkley moved that this resolution be adopted Seconded

Dr H M. McConnell of Pennsylvania —I think the General Session of the first day should commence at 10 o'clock That is the day when we have so much to do, and I would therefore move that the General Session on the first day be begun at 10 o'clock, and thereafter at 11 I offer this as an amendment. Seconded

Dr Alonzo Garcelon of Lewiston, Maine—I do not rise, Mr President, to speak to the amendment particularly I have no objection to that. I wish to say that the business of the General Session can not be properly attended to if we meet at 11 o'clock There is a vast amount of very important business to be done at every General Session I have been a member of the Association for a great many years, and I know very well the difficulty there is in getting through with our business, even when we meet at 10 o'clock, unless we hold the Session beyond the ordinary time for adjourning, namely, to 1 o'clock in the afternoon I trust the good sense of this Association will see to it that its business shall be attended to, and it can be done if the members are prompt, are here in proper time, and give three hours to the General Session each day for the purpose of transacting the business that comes before the Association You know, Mr President, we have the Presidential Address, we have other addresses to come before us, and as illustrated yesterday, it is impossible for us to get through with our business satisfactorily and intelligently (Applause) (Cries of Question ! Question !)

Dr Dudley S Reynolds of Louisville, Ky —I am as much interested in the Section work as anybody in the Association, likewise in the general prosperity of the whole body If the recommendations of our Business Committee, to whom we commit all the details of our business that my distinguished and venerable friend from Maine referred to are carried out, then we will have no need for three hours every day in General Session If we adopt the amendment suggested by the gentleman from Pennsylvania, the first day being the most important one, when the largest amount of business is required to be transacted, on that day we will have three hours, that is, meet at 10 o'clock and continue, if necessary, until 1 On subsequent days I am sure that 11 o'clock is quite early enough for the General Session It will enable the Sections to have two good hours of work in the forenoon, it will, at the same time, spur us up and make us prompt in the discharge of our duties in reference to executive business when we meet in general session I move the adoption of the resolution as amended Seconded and carried

The President—The next item is with reference to a resolution, to be presented by Dr Dudley S Reynolds

The Permanent Secretary read the resolution as follows

Whereas, The American Medical Association did at Detroit, 1892, unanimously resolve to demand of all the medical colleges of the United States the adoption and observance of a standard of requirements of all candidates for the degree of doctor of medicine, which should in no manner fall below the minimum standards of the Association of American Medical Colleges, and whereas this demand was sent officially by the Permanent Secretary to the Deans of every medical college in the United States and to every medical journal in the United States

Now, therefore, the American Medical Association gives notice that, hereafter no professor or other teacher in, nor any graduate of any medical college in the United States, which shall after January 1, 1899, confer the degree of doctor of medicine or receive such degree on any conditions below the published standard of the Association of American Medical Colleges be allowed to register as either delegate or permanent member of this Association

Resolved, That the Permanent Secretary shall within thirty days after this meeting send a certified copy of these resolutions to the Dean of each medical college in the United States and to each medical journal in the United States

The resolution was seconded by Dr Parke Ritchie of Minnesota. (Referred to the Business Committee)

The Permanent Secretary said he had received a communication from the Board of Trustees by Dr French Stone, which was referred to the Business Committee without being read

14 W Ohio St., Indianapolis, Ind , June 3, 1898

To the Business Committee of the American Medical Association

Sirs —The proposition to adopt a distinctive, attractive and permanent badge to designate members of the American Medical Association, which has grown to be one of the most powerful and influential scientific organizations in the world, is hereby respectfully presented for favorable consideration during your next annual meeting at Denver, Col This proposition has been discussed among members of the Association for many years, and the preponderance of expressed sentiment is that some method of recognition when they meet by chance as well as on social and professional occasions, is a necessity The newspapers and the medical press have also encouraged the use of some suitable emblem which should be constantly and conspicuously worn, not only for the above purpose, but as a means of professional identity in cases of emergency and acci dents that may aid in saving life It is true that we have many men of our profession holding official position in the organization, and otherwise distinguished, for whom in some particulars medical insignias are of less benefit than to the vast majority of its members of good standing who pay their annual dues and aid in other ways in maintaining the strength and influence of the Association These men are not only entitled to some method of making known their connection with the organization but would greatly appreciate the privilege of wearing an emblem that had been approved and adopted as a permanent badge, indicating worthy membership of our National Association It is also believed that if such an emblem were adopted that other medical men throughout the country would be inclined to become permanent members of the organization, and thus aid in giving it additional financial as well as numerical strength And we can readily see how the wearing of such means of permanent identification might be of much service in arousing a spirit of fellowship that would be helpful in bringing the members of the Association closer together ' It would serve to fix attention and direct thought to the interest of the Association during the intervals between the annual meetings and would prove suggestive of matters pertaining to its growth and development " To meet this requirement I herewith send you for consideration and adoption what is believed to be an appropriate gold and enameled finished emblem Please observe that the device is in the form of a circular shield, having for its central feature a spear pointed cross, opposite to the arms of which are the initial letters of "Members of American Medical Association" The circular shield and spear pointed cross typify the protective armor of the period in which medicine had its origin The cruciform center not only typifies the great advancement of the profession during the Christian era, but was also the ideographic sign or symbol of life and of the "Healing Art" in ancient Egypt, Greece, Rome and other nations of the greatest antiquity The initial letters and enameled National colors (red, white and blue), sufficiently symbolize the Nationality of our Association For these reasons it is believed that the design represents the origin, history, traditions and province of our profession, as well as National character of our organization in the fullest sense, and that the emblem constantly worn as an ornate coat lapel button (or scarf pin), would serve at all times and upon all occasions throughout the world as a distinctive method of social and professional recognition, thus securing the many advantages resulting from this identity

In order that this badge proposed for the exclusive use of members of the Association should not be obtained or worn by any one except a member of the Association I have obtained letters patent for the leading feature of the design which confers the exclusive right to make, use and sell the emblem throughout the United States and Territories thereof, and I desire it to be furnished to members only, through the official representative of the Association

I further agree that in case this badge is adopted and it is desired by the executive committee that the patent right in it become the exclusive property of the Association to assign and transfer my whole right, title and interest in and to the said design for the badge and in and to the letters patent therefor aforesaid, as well as in and to the tools for manufacturing the aforesaid badge, now in the hands of Irons & Russell, of Providence, Rhode Island, and herewith send the legal papers necessary to such agreement, as well as a written proposition from the aforesaid Irons & Russell to manufacture the insignia, either in enameled rolled plate or solid gold, on unusually reasonable terms that will only confer considerable revenue to the Association

Hoping that the foregoing proposition will meet with favorable action in securing the adoption of this emblem as a permanent badge by the Association during its present session

Yours very truly,
RICHARD FRENCH STONE

Referred to the Business Committee

Dr W W Keen of Philadelphia offered the following resolution

Resolved, That a committee of five be appointed by the President, at his leisure, to co operate with similar committees from other bodies to consider the desirability of formulating plans for the dissemination of knowledge of the value of experimental research in the progress of the science and art of medicine

Seconded by Dr Dudley S Reynolds and referred to the Business Committee

Dr William H Humiston of Cleveland, Ohio read the report of the special committee on National legislation to the Ohio State Medical Society, May 5, 1898 as follows

To the President and Members of the Ohio State Medical Society

GENTLEMEN —Your committee on National legislation appointed in response to the overture of the New York State Medical Society, has awaited the call of the committee of that society for a meeting in Washington to perfect a National organization, but so far no call has been received Copies of the resolutions of this society anent the antivivisection bill of Senator Gallinger, still pending, were sent by your chairman to Dr Busey, chairman of the District Committee of the District of Columbia, and likewise to Senators Foraker and Hanna Your committee received a reply from Senator Foraker, and a promise to give your request a favorable consideration, but no reply has so far been received from Senator Hanna The District Committee, however, caused your resolutions to be printed and placed in the hands of every member of the Senate Apparently, if we may judge from the circular letter sent out recently by Dr Howard Kelly of Baltimore, Senator Gallinger is still obstinate in his determination to override the all but unanimous sentiment of the medical profession, and to push the enactment of his mischievous measure into law, but up this time, owing, in no small degree, to the efforts of the Society, he has not yet succeeded in bringing it to a vote, but the antivivisectionists are persistent, they have ample means and time at their disposal, they have able and influential advocates resident in Washington, and the medical profession must also have its men on the ground, acting with full authority delegated to them in order to counteract the effects of the so called humane organizations to hamper and hopelessly cripple physiologic and biologic investigation in the Government laboratories and in the Medical Schools of the District of Columbia

It seemed to your Committee, last year, that the New York plan provided for too large a body—a body which from its very size, would prove too unwieldy for prompt and effective work—but the need of a body which shall authoritatively represent the organized medical profession upon those matters of legislation regarding which the medical profession alone has the requisite training to speak with the proper authority, becomes increasingly evident, and your Committee begs leave to submit the following plan of organization for the consideration of the Society

1 That the AMERICAN MEDICAL ASSOCIATION be requested to appoint a standing committee of three on National legislation, one member to be a resident of Washington, one, of Baltimore, and one, of Philadelphia A Committee so located could be called together at Washington on short notice, and appear before the committee of Congress at any time

2. That each State Society of legally qualified practitioners of medicine be requested to appoint a committee of one on National legislation, such committee to keep himself in communication with the Senators and Representatives from his own State, so that they may be always kept in touch with the medical profession concerning matters of sanitary and medical legislation

3 That a joint meeting of the Committees of the AMERICAN MEDICAL ASSOCIATION, and of the committeemen of the several States be held in Washington, subject to the call of the Committee of the AMERICAN MEDICAL ASSOCIATION The purpose of that meeting would be to give opportunity for each State committeeman to personally interview the Representatives and Senators from his own State, and for the committee, as a whole, or by sub committees, to appear before the various Congressional committees to set before them authoritatively the sentiment of the medical profession regarding pending legislation, and to urge the passage of measures upon which the medical profession of the Nation have already agreed, and to which they have already given support by formal action Meeting thus on the ground and consulting together, the members of such joint committee would, moreover, become better cognizant of matters upon which the medical profession ought to take action, and by embodying such matters in their annual reports to their respective societies, the sentiment of the medical profession as a whole would be promptly and authoritatively declared We should then begin to act as a unit in matters of National legislation affecting the sanitary interests of the people as a whole

4 That the necessary expenses of these committeemen be borne by their respective societies

In conclusion your committee would recommend further the adoption of the following resolutions

Resolved That we again enter our earnest protest against Senate Bill No 1063, entitled "A Bill for the Further Prevention of Cruelty to Animals in the District of Columbia," for the reason that existing laws amply provide for the prevention and punishment of any real cruelty to animals which may be proven to occur within the District, and because the physicians and scientists of the District have not so conducted themselves in the past as to warrant the system of irresponsible espionage authorized by the bill, and further, because the paramount interest of the sick and afflicted demands that the medical profession shall have liberty to investigate the nature and treatment of disease, free from cumbersome and vexatious restrictions, such as are provided in the measure in question

2. That we again urge upon Congress the necessity of thorough inspection by a medical officer of the United States, of all immigrants and their baggage, before they embark for this country, in order that the importation of contagious and infectious filth diseases may be more effectually prevented

3 That the Secretary of this Society send a copy of these resolutions to each Senator and Representative in Congress from Ohio and of the latter resolutions to the chairman of the committee on commerce and on immigration of both House and Senate

Respectfully submitted
L B TUCKERMAN,
RUFUS B HALL,
A M BLEILE,
Committee

The report was recommended for adoption by the Business Committee, and unanimously adopted by the State Society

Referred to the Business Committee

Dr H A Hare introduced the following resolution

WHEREAS, In time past circumstances have occurred which have deprived this Association of the presence and co operation of many members of the profession of high standing who have contributed much to the advance of medicine and surgery

Resolved, That the AMERICAN MEDICAL ASSOCIATION invite the New York Medical Society, the New York County Medical Society, the New York Academy of Medicine and other societies of good and regular standing to send delegates to this Association who will be received and accredited upon proper credentials from the officers of such societies

Resolved, That all actions and ordinances of this Association contrary to this resolution in spirit or letter are hereby rescinded

Referred to the Business Committee

The Permanent Secretary announced the Committee on Nominations, as follows

Alabama—H A Moody Arkansas—J H Southall California—H B Ellis Colorado—J T Eskridge Connecticut—T D Crothers District of Columbia—H L E Johnson Georgia—E T Connelly Illinois—T J Pitner Indiana—J H Oliver Idaho—E E Maxey Iowa—W D Middleton Kansas—James A Lane Kentucky—J N McCormack Louisiana—Randell Hunt. Maine—M C Wedgewood Massachusetts—H O Marcy Maryland—J B Blake Michigan—H O Walker Minnesota—A J Stone Missouri—I N Love Montana—C K Cole Nebraska—G H Simmons New Jersey—Alexander McAllister New Mexico—W R Tipton New York—E D Ferguson North Carolina—J A Burroughs North Dakota—H Wheeler Ohio—J E Cook Oregon—J. S Moore Pennsylvania—H M McConnell Rhode Island—E D Clark South Carolina—J L Dawson Tennessee—G C Savage Texas—John O McReynolds Utah Territory—S Ewing Vermont—E R. Campbell Virginia—L B Edwards West Virginia—A L Huff Washington—J B Eagleson Wisconsin—W H Earles Wyoming—R. Harvey Reed

United States Marine Hospital Service—J M Gassaway

The Army and Navy of the United States—Drs W P Munn and A L. Gihon

Alaska, Arizona, Delaware, Florida, Indian Territory, Mississippi, Nevada, New Hampshire, Oklahoma Territory and South Dakota are not represented

The Permanent Secretary read telegrams from Drs Nicholas Senn, Donald Maclean and F H Wiggin, regretting their inability to be present

The following communication was read from Dr Horner relative to the Medical Aid Association

LIST OF SECRETARIES OF STATE MEDICAL SOCIETIES

I R Wellington, District of Columbia, I R. Jordan, Alabama, G A Archman, Wheeling, W Va , W F Amos, Portland, Ore , I W Cokenower, Des Moines, Iowa, D C Hawley, Burlington, Vt , W G Townsend Baltimore, Md , N E Wordin Bridgeport, Conn , Ignatius Donelly, St Paul, Minn , F W Goss, Roxbury, Mass , P W Tomlinson, Wilmington, Del , C D Smith, Portland, Me , W C Riddell, Helena, Mont. , F T Rogers, Providence, R I , Steele Bailey, Stanford, Ky , C R Atchison, Nashville, Tenn , G H Simmons, Lincoln, Neb , T Hubbard, Toledo, Ohio, W F Cheney, San Francisco, Cal , F H Coe, Seattle, Wash ; H A West, Galveston, Texas

The above list of Secretaries of twenty one States of the Union is made in accord with the resolutions unanimously adopted and endorsed by the Medical Society of Pennsylvania at the meeting of the AMERICAN MEDICAL ASSOCIATION in Philadelphia, viz

Your committee would respectfully recommend that the Association which will assemble at Denver, Colo , will appoint a sub committee and nominate a President of an American Medical Aid Association, Secretary, Treasurer and Corresponding Secretary, and will invite Fellows of the AMERICAN MEDICAL ASSOCIATION to contribute a sum of two dollars per annum to raise a sum to be used for the relief of disabled physicians and the widows and orphans of said Fellows, members of the American Medical Aid Association, when application is made for such relief Respectfully submitted by Chairman of Committee
FREDERICK HORNER, M D

May 13, 1898 P A Surgeon U S Navy (Retired).

Dr L J Lautenbach of Philadelphia offered the following resolution

WHEREAS, Errors in Public School Text books treating of Physiology, Hygiene, Chemistry and other subjects allied to medicine are prone to cause not only misapprehension and doubt but may occasion serious damage to the life, health and welfare of the community, and it having been proven that such errors exist in greater or less number in such works, therefore be it

Resolved, That the President of the AMERICAN MEDICAL ASSOCIATION appoint a committee of five who shall be empowered to examine all such works and finding such errors communicate with the authors and publishers of the same with the view to their elimination and report their results to the society annually

Referred to the Business Committee

Dr Marcy of Boston, offered the following

Resolved, That the Secretary hereby request the various State medical societies to so change the date of their annual meeting so as not to conflict with the date of the annual meeting of the AMERICAN MEDICAL ASSOCIATION

Seconded and carried

Dr W H Sanders of Mobile, Ala , offered resolutions in regard to the public health, which were referred to the Business Committee [1]

At the conclusion of the resolutions, Dr Sanders said Mr President, I move the adoption of these resolutions as an expression of the opinion of this body upon the matters which the resolutions bear Seconded and carried

Dr William Bailey of Louisville, Ky —I have a short preamble and resolution which I desire to read and ask their reference to the Business Committee

WHEREAS, The business of the Association has increased so greatly that it is difficult to have it all performed in a satisfactory manner under the existing arrangements,

WHEREAS, New lines of operation have been opened which it is desirable to follow,

WHEREAS, It is believed that with an active Secretary, who could devote his whole time to the work, very material advance could be made in extending the operations and increasing the usefulness of the Association, with a great increase in its membership, therefore, be it

Resolved, That a General Secretary be appointed by the Business Committee at a salary not exceeding $3000 per year, who, under the direction of the Business Committee, shall forward the interests of the Association in every way possible

Resolved, That the present Permanent Secretary be retained with the title of Honorary Secretary, with the present salary

Resolved, That the Business Committee be directed to consider the matter and report to the Association in regard to the feasibility of the plan proposed

Referred to the Business Committee

Dr George M. Gould of Philadelphia, offered resolutions as follows, which were referred to the Business Committee

WHEREAS, The establishment, organization and filling of public medical libraries is a means of vast and increasing importance both for the preservation of medical literature and the progress of medical science, and

WHEREAS, There are at present but very few such libraries in the United States, and of these, the great majority are in a sad state of imperfection and inefficiency, and

WHEREAS, Most valuable literature is wasted because of the non existence or imperfection of such libraries, it is therefore

Resolved, That the AMERICAN MEDICAL ASSOCIATION unanimously approves of any ethical and legitimate methods of encouraging the organization, perfection and support of public medical libraries in all the cities, towns and villages of the United States, and earnestly urges the members of the Association to aid in the formation and organization of such libraries, also

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[1] These resolutions have not been received by the JOURNAL.

Resolved, That the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION be sent gratis to the membership libraries of the Association of Medical Librarians, or to other libraries that may be recommended by the Executive Committee of said Association

Dr H A Hare of Philadelphia—Mr President, I rise to a point of order

The President—Please state your point of order

Dr Hare—In your decision concerning an important resolution which I offered a few minutes ago, the resolution was referred to the Business Committee As far as I can learn, sir, that reference is incorrect

The President—Do you appeal from the decision of the Chair?

Dr Hare—I do, sir

The President—Dr Hare of Philadelphia, appeals from the decision of the Chair in regard to the reference of his motion or resolution The question before the Association is, gentlemen, shall the decision of the Chair be sustained? Those who favor sustaining the Chair in reference to the resolution offered by Dr Hare in regard to the New York State Medical Society will signify by saying aye, contrary minded, no

[The Chair was sustained in his ruling]

Dr H M McConnell of Pennsylvania—I move you, sir, that Dr Hare's resolution be taken from the Business Committee Seconded (When the Chair put the motion of Dr McConnell the ayes were so feeble that a division was called for The result was that 104 were in favor of taking the resolution from the Business Committee, and 116 against)

The Permanent Secretary read the following resolution, offered by Dr Albert L Gihon

Resolved That the Permanent Secretary as soon as possible after adjournment be requested to communicate with the Secretaries of State and Territorial medical societies to nominate their representative members on the Rush Monument Committee, and to report as soon as possible in order that the names may be announced in the JOURNAL of the ASSOCIATION Referred to Business Committee

The President—The next thing in order is the disposition of amendments to the Constitution and By Laws The first one to take action on is that offered by Dr W L Wills, and I will ask the Secretary to read it

The Permanent Secretary read the following Article IV —Officers Amend to read "Each officer shall hold his appointment for one year, and until another is elected to succeed him "

Dr W L Wills of Los Angeles, Cal —Mr President, I wish to offer an amendment to the amendment to make the matter more easily and clearly understood, so as not to interfere with the tenure of office of members of the Judicial Council or of the Board of Trustees, whose term of office is provided for in another place in the Constitution I would like to insert these words "Each officer, except members of the Judicial Council and Board of Trustees, shall hold his appointment for one year, and until another is elected to succeed him." Seconded

Dr L Duncan Bulkley of New York—May I ask whether this amendment to the amendment affects the members of the Business Committee

Dr Wills—There is no intention of interfering with the tenure of office of any permanent committee

Dr William T Bishop Mr President, no matter what the object intended to be accomplished may be, there is one thing in regard to the written letter, namely, that it only means what is written, and not what is understood The offerer of this amendment does not understand what he wants himself nor does he understand, it seems to me, his own amendment which he made to his previous amendment. I would suggest, to make it definite and to prevent any confusion, that the names of the President, Vice-Presidents, Secretary and Treasurer be included Let the members understand what we are voting for They are the officers it is intended to hit I am opposed to the amendment unless it is expressed in that way

The President—Are you ready for the question of the amendment to the amendment? Your vote will carry with it the suggestion offered by the gentleman from Pennsylvania, who

Dr Daniel R. Brower of Chicago—The Business Committee excepts the Judicial Council, the Board of Trustees and the Business Committee

has just appointed a Prize Committee What becomes of it?

The President—That will depend upon what action is taken.

Dr E D Ferguson of Troy, N Y —Hardly any of us know what we wish to do in regard to this matter, and I therefore move that the whole question be laid upon the table Seconded and carried

The President—The next item is the amendment offered by Dr H B Ellis of California, which I will ask the Secretary to read

The Permanent Secretary then read the following

Article IX —Conditions for Further Representation "Any State or local medical society, or other organized institution, whose rule, regulations and Code of Ethics agree in principle with those of this Association, may be entitled to representation on the advice or agreement of the Judicial Council "

Dr Dudley S Reynolds—I move the adoption of the amendment. Seconded

Dr X C Scott of Cleveland, Ohio—This is a very serious question for the Convention to consider In the event of our meeting in large cities, it will be possible to form enough medical societies where they can send enough delegates to control the legislation of this body Mr President, this question has come up year after year and each year it has been voted down Therefore, Mr President, I move that this amendment be laid upon the table Seconded and carried

The following amendment was read and adopted

"That the name of Section on Dental and Oral Surgery be changed to that of Section on Stomatology "

The Permanent Secretary read the following amendment offered by Dr L Duncan Bulkley

"That all new business shall be introduced not later than the third day of the session "

Dr X C Scott—I move its adoption Seconded

Dr W T Bishop—I move as an amendment that the following words be inserted, "unless there is objection " This will accomplish the same thing and will keep us from being tied up Seconded

The motion as amended was put and carried

Dr J H Musser of Philadelphia then read the Oration in Medicine

On motion, the Association adjourned until 11 A M Thursday

JUNE 9—THIRD GENERAL SESSION

The Association met at 11 A M , and was called to order by the Fourth Vice President, Dr Happel of Tennessee

The Permanent Secretary read the minutes of the previous general sessions, at the conclusion of which Dr A L Gihon said I certainly object to the statement in the minutes that I offered the resolution which the Secretary says I did The resolution offered by me concerned another matter which he has not read The resolution I offered was to this effect, that the Secretary communicate with the secretaries of the State and Territorial societies with respect to nominating representative members for the Rush Monument Committee, and that those names be published in the JOURNAL of the Association

The President—I believe Dr Lane, of Kansas, offered a resolution making Dr Munn of the army, and Dr Gihon of the navy, members of the Nominating Committee The Secretary will make these corrections

The President—The next matter to come before the Association is the report of the Board of Trustees, which will be read by Dr Garcelon of Maine

Dr Garcelon then read the report as follows

REPORT OF THE BOARD OF TRUSTEES

Members of AMERICAN MEDICAL ASSOCIATION In submitting the present report at the 49th annual meeting of the AMERICAN MEDICAL ASSOCIATION, and the 15th year since the change from a yearly publication of the Transactions of the Association to the establishment of a weekly Journal, entitled "THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION," the Trustees take pleasure in congratulating you upon the success which has attended the Association in whatever light examined Organized originally especially for the purpose of elevating the standard of medical education, it has steadily kept that object in view, and we have great pleasure in noting that a large number of our leading medical institution have not only lengthened the curriculum of their instructions, but have demanded higher qualifications of those preparing to enter the ranks of the profession The importance of a liberal education is becoming more and more noticeable, and we trust that the day is not far distant when every young man who seeks to qualify himself for the most important position that the needs of human society demand, will not only be able to acquire a satisfactory preliminary education, but to pass such an examination as only a first-class college course may require Aside from this, there can probably be no better method desired in a country of so vast an extent as this to cultivate friendly social relations and that *esprit du corps* which ought to exist between the members of every liberal profession, and we shall be sorry to see the day when these annual gatherings come to be looked upon with indifference

In 1883, when the experiment of publishing a weekly medical journal as the organ of the Association was suggested, there was quite a large minority of our members who were decidedly opposed to such a change They thought the annual volume of the Transactions was all that could be profitable, and besides we were feeble in membership, and without funds to purchase material, or meet the current expense of rent, type setting, proof work, stitching and other necessary machinery or material, saying nothing of paper and type, without which nothing could be accomplished Aside from this, where was the enterprise to be started? The members east of the Alleghanies thought they occupied the citadel of medical lore, and that as Washington was the seat of government it would, and by all means it should, be the point in that vicinity On the other hand it was urged as the Association was of a national character, a more central point should be selected, and all things considered, either Chicago or St Louis should be selected and the fact that Chicago took the lead in point of population and was likely to do so for a period of years at least, that city was selected for the purpose

The first number of Vol 1 was issued July 1, 1883, and 3,500 copies of that date were struck off, being largely in excess of the membership of the Association, hoping by sending copies to physicians outside of membership, many might be induced to become members, or at least subscribers for the JOURNAL At that time the membership of the Association, including both delegates and permanent members, did not exceed 1,500 For the five succeeding years the increase of membership was *not large, there being during the year 1887 only an increase of* 161. Since that time, that is, during the past decade, the increase of membership, as well as of the general circulation of the JOURNAL has rapidly increased

The circulation for the year 1897 was

January 2.	7,600	July 3	8 600
January 9	7,700	July 10	9,000
January 16	7,800	July 17	8 900
January 23	8,500	July 24	8,950
January 30	8,500	July 31	9,000
February 6	8,500	August 7	9,000
February 13	8,000	August 14	9 100
February 20	8,500	August 21	9 025
February 27	8,700	August 28	9 050
March 6	8,700	September 4	9 000
March 13	8,700	September 11	9,000
March 20	8,700	September 18	10,050
March 27	8,600	September 25	10 100
April 3	8,400	October 2	10,200
April 10	9,500	October 9	10,200
April 17	8,500	October 16	10,200
April 24	8,750	October 23	10 000
May 1	8,750	October 30	10 000
May 8	8,600	November 6	10,000
May 15	8,600	November 13	10,000
May 22	8,500	November 20	10,000
May 29	8,600	November 27	10 500
June 5	8,500	December 4	10,700
June 12	9,000	December 11	10,700
June 19	8,300	December 18	11,000
June 26	8,400	December 25	11,000
	220,900		253 275

First six months of 1897 weekly average was 8,496, second six months of 1897 weekly average was 9 741, total weekly average for year was 9,118½

The growth since last autumn has been remarkable, thus

The regular weekly issue of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION from October, 1897, to May, 1898 inclusive, a period of eight months, was as follows

WEEKLY EDITION			WEEKLY EDITION		
October 2	10,200		February 5	10,000	
October 9	10,200		February 12	9,800	
October 16	10,200		February 19	10,400	
October 23	10,000		February 26	9,850	
October 30	10,000				40,050
		50,600	March 5	11,000	
November 6	10,000		March 12	10,200	
November 13	10,000		March 19	10,500	
November 20	10,000		March 26	10,950	
November 27	10,500				42,650
		40,500	April 2	11,000	
December 4	10,700		April 9	11,000	
December 11	10,700		April 16	10,800	
December 18	11,000		April 23	10,500	
December 25	11,000		April 30	10,500	
		43,400			53,800
January 1	9,600		May 7	10,500	
January 8	9,700		May 14	10,425	
January 15	9,700		May 21	10,500	
January 22	9,700		May 28	10,475	
January 29	9,700				
		48,400			41,900
		182 900			178,400

Grand total, 361,300, weekly average, 10,323

The appearance and general character of the JOURNAL is highly satisfactory, but we are by no means content without showing continual advancement We have carefully examined other weekly medical journals published in this country and have compiled the following instructive table

FIVE WEEKLY MEDICAL JOURNALS—SIX MONTHS' ISSUE

(Comparative statement of matter published)

July to December, 1897	Original articles	Separate titles	Illustrations	No pages		Composition—ems
				Reading	Adv	
Boston Med and Surg Jour	185	829	72	692	872	1 209,088
New York Medical News	187	1,189	116	888	480	3 097 717
New York Medical Journal	167	1,076	178	888	1,096	2,903 816
New York Medical Record	187	1 483	100	982	1,095	3 644 849
Journal American Med Association	280	1,510	226	1,272	692	5,818,594

This table shows conclusively that the members receive more for their money in amount of reading matter than in any other journal, and we may without fear of unfavorable result compare our JOURNAL in point of literary and scientific qualities to any regular weekly published in any part of the world

Viewed as a newspaper, it now undertakes to publish everything in current news that will interest the physician, assist him in his daily work and defend him against outside malice The legitimate expenses of such a journal must necessarily be large, and as its pages increase they will annually become larger The rule of the ASSOCIATION whereby all proprietary articles must publish their formulæ, containing the name and amount of each ingredient every issue, causes a loss to the JOURNAL of from $8,000 to $10,000 annually, a loss which other journals are not compelled to sustain That the JOURNAL has succeeded and continues to succeed in spite of this immense limitation of advertising, is complimentary to the ability, tact and foresight of the editor, who, under the direction of this Board, made the JOURNAL more and more successful each year

The financial statement is as follows *Report of the JOURNAL for the fiscal year ended Dec. 31, 1897*

RECEIPTS

Cash on hand Jan 1, 1897	$1 694 82
Dec 31, Advertising	18,627 61
Dec 31 Subscriptions	4,389 68
Dec 31 Reprints	917 15
Dec 31 Collections through bank	1,864 34
Dec 31 Requisitions on Treasurer	20 000 00
Dec 31, Cash sales	146 47
	$47,140 07

DISBURSEMENTS

Dec 31 Pay Roll	$18,574 37
Dec 31, Postage	8 030 60
Dec 31, Editorial accounts	4 965 74
Dec 31, Commissions	768 66
Dec 31, Office salaries	7,880 76
Dec 31 Paper	9 636 15
Dec 31 Ink.	279 95
Dec 31 Telephone	175 00
Dec 31, Benzine and oil	22 70
Dec 31 Advance news	188 76
Dec 31, Gas	58 46
Dec 31 Type	119 54
Dec 31, *Bindery supplies*	51 90
Dec. 31 Letter files	11 10
Dec 31 Stationery	34 25
Dec 31 Rent,	1,500 00
Dec 31, Electric power	403 26
Dec 31 Binding	271 55
Dec 31, Membership transfers	497 50
Dec 31 Copyright on Journal	20 50
Dec 31, Repairs to machinery	58 50
Dec 31, Electrotypes	365 58
Dec 31, Benzine cans	3 00
Dec 31 Office fixtures	17 50
Dec 31 Express	2 00
Dec 31, Cartage	142 00
Dec 31 Mimeograph supplies	4 00
Dec 31 Reporting	569 56
Dec 31 Press rollers	75 36
Dec 31 Cutter knife	28 00
Dec 31 Check returned	119 69
Dec 31, Folder Supplies	9 85
Dec 31, Back numbers of Journal	8 60
Dec 31, Toilet supplies	15 00
Dec 31 Grinding cutter knives	21 60
Dec 31, Medical society lists	4 00
Dec 31, Telegrams	8 49

Dec 31, Agents traveling expenses	109 30
Dec 31, Subscription rebates	13 96
Dec 31, Advertising	31 00
Dec 31 Wipers	11 25
Dec 31, Check perforator	10 00
Dec 31 Postal deposit	5 00
Dec 31, Insurance	85 00
Dec 31, Taxes	165 98
Dec 31, Moving machinery	37 60
Dec 31 Miscellaneous expense	292 60
Total expenses (vouchers deposited with Treasurer)	$45 637 67
Check returned (bank voucher)	7 50
Balance on hand Dec 31	1 494 90
	$47,140 07

The following is an inventory of the Journal property

Mechanical Department —Three Miehle cylinder presses, 1 Crocker Wheeler 10 H P motor, 1 pony Gordon press, 1 Sheridan auto cutting machine, 2 folding machines, 4 imposing stones, 1 stitching machine, 100 make up galleys, 14 case racks, 2 banks (make up tables), 1 sort cabinet, 1 type cabinet, 3 type racks, 2 kitchen tables, 4 bindery tables, 11 high chairs, 9 kitchen chairs, 1 high back oak chair, 4 fonts "body type" about 4,000 lbs , 5 pr new chases, 1 proof press, 90 fonts job type, 200 mailing galleys, 1 pr large scales, 1 walnut desk, 150 lbs leads, 1 oak wash stand

Office Department —Two roll top desks, 2 flat top desks, 1 letter filing cabinet, 1 oak book case, 2 "Victor" safes, 6 revolving office chairs, 1 typewriter desk, 1 wire rack for exchanges, 1 P H box case, 1 12 ft. walnut table, 1 dictionary stand, 11 oak chairs, 2 Munson typewriters (one poor)

GENERAL FINANCIAL STATEMENT

The report of the Association Treasurer shows the total receipts for the year ending Dec 31, 1897, to have been $64,522 78 and the expenditures $25,637 67, and the balance $14,092.72 The balance on hand was so satisfactory in amount that the Board directed an additional $10,000 to be placed to the credit of the investment fund created by the Association in 1896 for the purpose of providing a permanent building for the home of the Journal This fund now amounts to $13,000 00, and if the Association continues to be economical, we shall very soon reach the amount required to erect a safe and convenient building adapted for the purposes of the Journal for many years to come The Trustees were very materially aided in the accomplishment of this very desirable result by the generous action of the Philadelphia profession, who by their local Committee of Arrangements returned the $1000 appropriated for places of meeting of the General Sessions and the Sections

INCORPORATION

In accordance with the recommendation of this Board, approved by the Association at its last session, the Board of Trustees has become an incorporated body, and now have a definite standing as a legal incorporation

In conclusion, the Board respectfully recommend that each member of the Association make renewed effort to help along the growing membership, by encouraging subscriptions, and membership applications, in order that by increased circulation and support we may still further extend the good influences of the Association for the advancement of useful knowledge, and the general welfare of the profession.

A Garcelon,
J M Mathews,
I N Love,
G C Savage,
James T Priestley,
Joseph Eastman,
Board of Trustees

Dr Dudley S Reynolds of Louisville—I move that the report of the Board of Trustees be received, printed in the Journal, and a vote of thanks extended to Dr Garcelon for having presented it. Seconded and carried

The President—Dr Gihon desires to make a one minute report, and we will now listen to him

Dr A L Gihon—I will read from my seat. I shall not occupy more than two or three minutes of your time I am requested by the donors on part of the Rush Monument Committee to make the following statement I have received from Dr Haggard of Tennessee, on account, $130 , from Dr Wingate of Wisconsin, $78 on account , from Dr Humiston of Ohio, $336 25, the balance will be given at Columbus , from Dr Cole of California $110 , from Dr Cantrell of Texas, $36 50 , from Dr Hare of Pennsylvania, $186 50, in addition to the $2000 , from Dr Wordin of Maine, $100 on account. I have nearly $12,000 in my hands toward the Rush Monument Fund With all respect to my friend, Dr Connor of Detroit, this is not rot, but fructifying seed, which has borne good fruit. (Applause)

The President—The next item will be the report of the Committee on Public Health, which will be read by the Chairman, Dr U O B Wingate of Milwaukee, Wis

Dr Wingate, as Chairman, then read the following report

REPORT OF SPECIAL COMMITTEE ON DEPARTMENT OF PUBLIC HEALTH

Mr President and Members of the Association—In 1891 the following resolution was adopted

"*Resolved*, That the President of this Association appoint a Committee of five to memorialize Congress, at its next session, on the subject of creating a cabinet officer to be known as a medical secretary of public health " This Committee was appointed and has been in existence ever since Its personnel has been changed from time to time In the argument set forth preliminary to the formation of this Committee it was claimed that "there is no other profession that excels us in positive efficiency to sustain public order, comfort and happiness We possess vast capacity for the direction of society and promotion of human happiness There is nothing in the body or mind of man that is not the purview of medical practice We are laboring unceasingly to assuage all illness of individuals and communities At this time the profession is manifesting, in a higher spirit than ever before, the purpose of suppressing contagious and infectious diseases This work was begun by Jenner a century ago, and the awful scourge of small pox has been stamped out wherever vaccination is compulsory We have now assumed the task of suppressing all the terrible diseases that desolate the world There are infectious and epidemic diseases that move about the world almost periodically, which we need not particularize They are often the products of squalor and wretchedness of peoples, and are spread far and wide about the lines of commerce These invisible foes of human health infest the air, water, and the very food we eat From the grosser foes of human health, cold, heat and tempest, men have power to defend themselves, but in regard to these invisible agents of suffering and death for want of higher knowledge they are largely helpless In their despair they turn to medical science for help, unwilling to trust in the brute law of the survival of the fittest.

"Governments, in a certain way, have always done something to aid medical men in their endeavors to stay pestilence and save the afflicted, but never adequately They have generally refused to make the medical profession a permanent integral part in the administration of the State, that is, in the making and execution of sanitary laws "

This argument goes on and defines what laws are necessary for the full employment of our beneficent profession, and affirms that all the measures for public relief on these important subjects should be under the guidance of medical men It sets forth that the medical profession holds itself ready, not only to diminish the fearful destruction of life now going on, but ultimately to destroy the contagia that cause it It refers to the latest addition to the cabinet of the President, that of secretary of agriculture, and sets forth that a secretary of public health will be of the greatest importance to the welfare of the nation, and finally the "unification of all things relating to public hygiene in the States through the aid of the State boards of health will give a solidity and usefulness to the practice of medicine never hitherto attained "

In 1892 this Committee made its first report under the chairmanship of the late and lamented Dr C G Commegys A "petition to the extent of eight thousand copies was printed in pamphlet form and issued within the covers of the Journal of the Association , a large number were sent out at the request of State boards of health and others , a sufficient number placed in the hands of members of Congress Copies were also sent to all medical schools of the Union, and a large number of favorable responses were received from physicians in the States, east, west, north and south , from some of our eminent schools of learning, and from State boards of health everywhere

"The petition, with the Bill formed to carry out its purposes, was presented in the first week of the session of Congress, in the Senate by the Hon John Sherman, and in the House by the Hon John A Caldwell, both of whom warmly expressed their belief that the measure is one of great public importance and that they would do all they could to secure its adoption "

The chairman of the Committee went to Washington and was invited to meet the committees of both Houses for a conference on the subject The report states that the chairman believes, "that in the House committee a favorable impression was made, but in the Senate committee I found the chairman quite unfavorable to it, because, and he gave no other reason to me, the present Congress would do nothing to increase departmental expenditures" The chairman made a long and full argument before these committees but the Bill did not pass

In 1893, the Committee reported again, and in the report the following appears "The members of the House committee seem disposed to favor such a department, the chairman of it saying that he thought the health of the people was certainly of as much consideration as that of cattle, which was so expensively investigated by the agricultural department But the first session of the Fifty second Congress adjourned and no report had been made by either House In the meanwhile the development of cholera in Europe, and the menace of its transportation to our shores lead to a renewed activity and grant of power to the quarantine office that made it impossible to secure any further action of Congress on the proposition to establish a department of public health Your Committee entertains most favorable opinions in regard to the activity and intelligence which is displayed by the Marine Hospital Service for the preservation of our seaports from epidemics of foreign origin, and for its regulations to prevent their transportation from State to State along our commercial lines, but it does not seem reasonable that all the benign measures of preventive medicine should be administered by a single organization, whose function relates to so limited a field in comparison with one which relates to the demography and hygiene of cities, towns and agricultural regions of the country at large, and the supervision of which would be far more intelligent and effective by a medical secretary of state than by the secretary of the treasury"

"The difficulties attending the introduction of Bills into Congress are very serious After the first reading they are referred to committees, where the delays are great To be successful it requires a constant watchfulness of their progress, and members of a committee grow weary of pleas for a favorable report."

The following resolutions in addition to the report were presented "*Resolved*, That this Association will continue its efforts to secure the creation of a department and secretary of public health at Washington, D C *Resolved*, That the President of the Association appoint ten members, representing different regions of the United States, who shall prepare as early as possible an appeal to his Excellency Grover Cleveland, to lay before Congress in his next annual message a recommendation that a department and a medical secretary of public health is a measure that is calculated to promote in a large way the public welfare *Resolved*, That this petition shall be presented, as far as may be possible, by the Committee in person"

The report and these resolutions were adopted and permission was granted that the Committee increase their numbers as they might deem necessary

In 1894, the Committee made a further report in which they state "In the course of our efforts to secure the passage of our original Bill, which has hitherto both at the annual session at Detroit and in Milwaukee, been laid before you, and which was introduced into the Fifty second Congress, in both Houses, in December, 1891, we found that a strong opposition was made to its favorable report from the committees in the Senate and House of Representatives by the chief of the Marine Hospital Service, because it seemed to him to encroach upon the function of his office as director of quarantine affairs and that it would greatly embarrass his work This was not intended at all by your Committee, therefore, as our Bill appeared to lie dormant in the hands of the Congressional committees, and as the dread apprehension of the entrance of Asiatic cholera through our commercial intercourse had so aroused Congress to the necessity of strengthening the quarantine service, making it apparently unnecessary to extend legislation in the direction of public health at that time, we were advised by friends in Congress to cease further efforts until the second session At the opening of the second session, in December, 1892, it was found that one of our important friends in the House committee was ill, in fact was unable to take his seat at any time during the session Your Committee then determined to wait the opening of the Fifty third Congress, in December, 1893, for a renewal of our activity In the meantime the great Pan American Medical Congress met in Washington in September, 1893, and we took advantage of the assembly of that body of eminent medical men to bring before it the importance of the creation of a department of public health in all governments under the direction of a secretary appointed from the medical profession, who should be on a parity in the cabinet of the President with the secretaries of other departments Our proposition was referred to the committee on State medicine and after a most thorough discussion by eminent practitioners of different States, was adopted with but one dissenting voice Your Committee next, after due consultation, concluded that in order to avert the opposition of the Marine Hospital Service, it would be wise to reconstruct our Bill so as to leave out any reference to the supervision by the secretary of public health of the quarantine service, merely referring to it as an available source of information for the general purposes of public health, on the same plan as that furnished by Surgeons General of the Army Navy, the State Boards of Health, and all municipalities, hospitals and asylums throughout the country Therefore, we redrafted our petition and Bill in regard to the establishment of the public health department and the secretary of public health, and they have been introduced into the present Congress, in the Senate by the Hon Mr Gray of Delaware, in the House by the Hon Mr Goodnight of Kentucky, and have been referred to proper committees"

The report also contains the following "Our success has been greatly compromised by the action of the New York Academy of Medicine in their endeavor to frustrate our movement by the preparation of Bills to obtain action of Congress, to extend in various ways the existing quarantine laws, and to keep the profession under the autonomy of the secretary of the treasury or the secretary of the interior, and their plan has been urgently pressed upon the attention of the State and medical societies, and State boards of health throughout the Union"

The report closes with the following "It is not probable that any bill can pass at this session of Congress, but the Association should at this time direct that a renewed effort should be made so as to be ready to make the most powerful effort possible to secure the passage of our Bill at the next session Such consolidated effort can only be made effective by an organized effort in every congressional district in the Union In conclusion we beg to offer the following resolutions *Resolved*, That the AMERICAN MEDICAL ASSOCIATION renews its appeal to the Congress of the United States to adopt the Bill now in its possession for the creation of a department and secretary of public health, *Resolved*, That the committee proceed as soon as possible to secure sub committees in each congressional district of the country to obtain favorable action on the part of their senators and representatives for this measure, *Resolved*, That a committee be appointed to endeavor to secure the friendly co operation of the New York Academy of Medicine, *Resolved*, That a sum not exceeding $400 be appropriated to defray the necessary expenses of the committee in carrying on their work."

In 1895 the Committee reported again, under the chairmanship of the late and lamented Dr Jerome Cochran, in which he states "Our facilities for doing the important work entrusted to us have been strictly limited by want of funds the Association having failed to adopt the resolution offered last year for an appropriation not to exceed $400 to defray the necessary expenses of the Committee so that such expenses as we have incurred have been paid out of our own pockets" He further states "That in December some members of the Committee visited Washington for the purpose of ascertaining just what could be done toward pushing our enterprise to a successful result We found a good many members of Congress who promised us their co operation whenever a favorable time could be found for the consideration of our Bill, but all agreed that it would be impossible to accomplish anything during the continuance of the Fifty third Congress" In conclusion he adds "To this end we had prepared a resolution recommending an appropriation, but as this object has been accomplished by the action of the Association on the recommendation of the Section on State Medicine it is not necessary to offer this resolution" The report was received

In 1896, another report of the Committee was made by Dr Cochran, in which he states that The Bill which was prepared for presentation to Congress was extremely crude and indefinite in its provision and gave this proposed high official very little important work to do It was indeed found to be so defective that last year the effort to have it enacted into a law was abandoned In the meantime the Marine Hospital Service, which in 1890 had already been invested with some important health functions, was by the act of 1893 converted into a National Health Department with very large and far reaching powers and abundant means It is not called a department of
public health, but is a department of health in
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of endeavoring to induce Congress to er
ment of public health, a very weak le
ment by the side of a very powerf
effort could not succeed Such an
succeed" In conclusion he says,
of national public health sup

that nothing should be done to discredit and weaken the various State boards of health, but that contrarywise the efforts should be to strengthen the State organizations and to foster and facilitate their further evolution If this principle is conceded it is at once made evident that the national department of public health should act in and through the State boards of health, in co operation and harmony with them and not outside of them and independent of them If the national department acts within the States, independently of the State boards, then the State boards become comparatively useless institutions and will fall into disfavor Some of the State boards are still weak institutions and any rivalry between them and the national department in State work will doom them to speedy destruction In this direction it would seem that additional legislation is needed, and the simplest plan to reach the desired reconciliation shall embrace two provisions First that the national department should act within the States by and in co operation with the State boards Second, that the head of the national department should call annually to meet in the city of Washington an advisory council to be composed of one representative from every State board of health This would bring about mutual understanding and co operation and reciprocity of action and would virtually constitute a great school of public hygiene Such a scheme as this would probably command the approval and support of the national conference of State boards of health, which conference is quite as deeply interested in movements of this character as is the AMERICAN MEDICAL ASSOCIATION At the conclusion of the whole argument we recommend that we be authorized to invite the co operation of the conference of State boards of health and the American Public Health Association in our favor to have the proposed Bill enacted into a law "

"On motion, duly seconded, the report was accepted, the plan outlined adopted, the Committee continued and enlarged by the appointment of a member from each State "

In 1897, your present chairman reported that it was found impossible to get either the Fifty-fourth Congress or the special session thereof to take any action on such a measure, that he had appointed additional members of the Committee as provided for at the last meeting and that a Bill had been drafted, which was presented The Committee recommended the continuance of the Committee with powers to have the aforesaid Bill amended to meet requirements, but not to change the general purpose thereof, and to introduce the same into Congress at its discretion Since that time, your Committee desires to report, that it has been actively engaged in this work

As soon as the Fifty-fifth Congress convened work was begun to prepare a Bill, or to amend the Bill submitted at the last meeting of the Association, that would meet the requirements and be most likely to pass Congress, and that would receive the support of the greatest number of the medical profession, and also one that would meet with the least opposition This was found to be a gigantic undertaking The chairman of your Committee went to Washington and consulted with the best men in Congress who would give him a hearing on the subject, and it was found that the great majority of members of Congress were totally ignorant of the subject and many of them were not inclined to give it the time that was necessary to become familiar with it. Others, however, required time to study it. It was found, however, that it was out of the question to find a member of Congress who would introduce a measure, even, creating a cabinet officer The President, members of the cabinet and of Congress were opposed to creating any more cabinet offices It was argued that there were too many cabinet offices now, and if the way was opened by considering our request other organizations would ask for the same, and it was absolutely decided by Congress and the President that this proposition could not be entertained There was also equal opposition by Congress to creating any independent commission, and the only thing that would receive recognition was a commission or bureau to be under the supervision of some other department. The Bill was drafted and redrafted many times before we could get it in such shape as to receive the support of certain leading members of Congress The main idea, however, of having a single medical head to be located in Washington, and for him to have the aid of counsel from members of State health organizations from each State and Territory, as outlined in the report of Dr Cochran two years ago and adopted by the Association, was steadfastly adhered to throughout by the chairman of your Committee, and the same was incorporated in the Bill that was finally decided upon This idea was also endorsed by the American Public Health Association at its last annual meeting held in Philadelphia, and it is almost unanimously approved by those who have given the most attention to the question Your chairman believes that this feature of the Bill is by far the most vital portion of National Health Legislation that we can ask for. Before the Bill was introduced a conference was held between the chairman of your Committee and the Supervising Surgeon General of the Marine-Hospital Service, with a view of attempting to bring about some compromise in the provisions of the Bill that would avert the opposition of that Service, but such was found impossible, and that Service would only favor the Bill which is known as the Caffery Bill, which only relates to quarantine, leaving out all attention to internal sanitation, which your Committee believes to be of far more importance than quarantine, and gives to that Service autocratic powers to control not only maritime quarantine but to go into any State or Territory and take full charge, without any voice from the local authorities either in making rules or regulations or the enforcement of such rules and regulations as that Service may see fit to adopt. This Bill, which is practically the only opponent now existing in Congress against our measure, gives autocratic power to one man, namely, the Supervising Surgeon General of the Marine Hospital Service, to have absolute control over all quarantine, both maritime and interstate Your Committee found a very decided objection to this measure in Congress, on the other hand, it had some very strong supporters, the supporters believing that the Marine Hospital Service furnishes the best foundation upon which to build a national health department

Our Bill was introduced into the Senate by the Hon John C Spooner of Wisconsin, and referred to the committee on "Public Health and National quarantine," and into the House by Hon Theobald Otjen of Wisconsin, and referred to the committee on "Interstate and Foreign Commerce " The Senate committee refused absolutely to hear your Committee, or to give them any opportunity to be heard on the question They had decided, with one dissenting vote, to recommend the Caffery Bill, which places the quarantine power into the hands of the Marine Hospital Service, and all other Bills, several of which were before them, were laid aside The House committee, however, gave the chairman of your Committee a hearing, and he was ably supported at that hearing by Dr H B Horlbeck, the health officer of the city of Charleston, S C, and Dr A H Doty, quarantine officer of the port of New York. There was a division in this committee and it is doubtful how it will report to the House In the Senate, however, it is intended that our Bill shall be offered at a proper time as a substitute for the Caffery Bill, and it is believed by Mr Spooner, who has it in charge and he is generally recognized as one of the ablest senators in Congress, that it stands a fair chance of passage It is also believed that the Caffery Bill will not pass either the House or the Senate During this time your chairman has visited Washington five times, and has been ably supported there from time to time by Dr C O Probst of Ohio, Dr Horlbeck of Charleston, Dr Doty of New York and Dr H L E Johnson of Washington, as well as Dr Porter, State health officer of Florida, and to whom he desires at this time to return grateful acknowledgement He has also attended the quarantine convention held at Mobile, Ala, where the question of national legislation was discussed, and argued the question before that convention, and also went before the New York Board of Trade and Transportation, and succeeded in getting that body to support our measure

Your chairman is pleased to report that he believes that never before has any Bill of this nature, that has been introduced into Congress, received the extensive support that the present Bill has and is receiving It has the support of the New York Academy of Medicine, the New York Board of Trade and Transportation, the New York Chamber of Commerce and several other large business organizations in the country who are vitally interested in quarantine matters It has received a great deal of attention from the newspapers of the country and as a general rule has been favored by them It has, however, received some very bitter opposition by some few medical journals of the country and one sanitary journal, namely, the *Sanitarian* This publication has been exceedingly bitter and the vials of wrath of its editor have been frequently replenished and poured out profusely, much, undoubtedly to his satisfaction, and greatly to the amusement of those who know his peculiarities Practically there are but two Bills relating to Public Health before Congress at the present time, our own Bill and the one known as the Caffery Bill, which favors the Marine Hospital Service, and provides that that Service shall be the health department of the country The New York Board of Trade and Transportation, a very large and influential business organization, took a great deal of pains to learn the views entertained throughout the country concerning the matter They addressed personal letters to nearly one thousand professional men, sanitarians and men engaged in trans portation and commercial pursuits These letters contained questions relative to quarantine and solicited the opinion of these men as to the best sanitary legislation that could be asked for "Hundreds of valuable replies were received to these inquiries and only thirteen of them endorsed the proposition to enlarge the powers of the Marine Hospital Service All of these thirteen letters contained the one chief argument that the Marine Hospital Service was a good nucleus to build a National Health Bureau upon "

"On the other hand, a very large majority of the replies expressed the opinion that the National Government can never hope to create a successful national health organization based upon the Marine Hospital Service as a nucleus, because in many States the bitter hostility to the Marine Hospital Service, engendered by its own acts, is so formidable as to preclude any possibility of harmony between it and such State and local authorities The opinion was that to give the Marine Hospital Service still more arbitrary powers as proposed in the Caffery Bill, without the obligation to consult or in any way regard the local authorities, would only widen the breach, intensify the bitterness and render resort to force necessary to carry out the Marine Hospital Service regulations " In a letter addressed to the Hon Jacob H Gallinger, U S Senator, by the President of the New York Board of Trade and Transportation he states, "The consensus of testimony before our committee was overwhelmingly in opposition to the letter and spirit of the Caffery Bill It stamped the Bill as narrow and wholly inadequate to meet the very pressing needs of the country The Caffery Bill exaggerates the importance of quarantine, and makes no other provision for public health protection, while advanced sanitary science pronounces quarantine to be barbarous and obsolete The practically uniform opinion was that the country is now ready for a law which will make quarantine of constantly decreasing importance as local sanitary administration shall be stimulated and perfected And it was very clearly shown that any law that will successfully meet the situation and needs of the country must of necessity have due regard for the wishes and views of the people must foster and encourage good will, a spirit of harmony and co operation between States, and the national authorities and local authorities for the common well being The Caffery Bill is the antipode of this view It is obnoxious in its spirit, and would be more so in its enforcement, to the great mass of the American people in all the States The Spooner Bill (which is our Bill), on the other hand, is in full accord with the most enlightened modern views of health protection It does not abolish quarantine but in time would bring about conditions which would make quarantine almost unnecessary It recognizes several departments of the National Government, and every State and Territory as interested and important factors in the scheme of health protection, and gives to each a voice in the framing of health regulations, and this is done by means of organization so simple as to be immediately moved to action in emergencies It removes friction and hostilities and promotes harmony and co operation, which are essential to the success of any National health law It violates no principle of national or local policy Our Committee went over all this ground with the greatest deliberation, and although their views upon taking up the question had a decided leaning toward the proposition to give the Marine Hospital Service the absolute and arbitrary power it asks for, they finally and unanimously reached the opinion that the passage of the Caffery Bill would be a serious injury to the people of the United States by delaying and hindering the broader, better and more certain solution of the problem which the Spooner Bill will afford "

The Bill was about to be acted upon in the Senate at the time of the declaration of war with Spain Since then all matters of this kind have been laid aside, as is well known, and probably no action will be taken upon this matter during the present Congress I am pleased to report that Senator Spooner, who has this Bill in charge in the Senate, and also Mr Otjen of the House, are enthusiastic supporters of this measure They are both strong men and will do everything in their power to have this Bill pass Congress at some future session, if not at this I also have to state that the money appropriated by the Association has been all used and more besides, and that the Committee is sadly in need of funds to carry out this work It is absolutely necessary that some one should be in Washington from time to time when this measure comes up for action or comes up for any hearing, as in the future, in all probability, these Bills will be re referred to the Committee and future hearings be had In order to have a Bill pass Congress it must be watched from stage to stage, and some one must be there to look after it and to furnish members of Congress who have it in charge with such evidence and other material as they may from time to time require I herewith submit a copy of Bill as now perfected and before Congress, and most respectfully offer the following resolutions and move their adoption

Resolved, That the Committee on Department of Public Health be continued, that the Bill as now perfected and before Congress, and which is submitted with this report, be and hereby is approved, and that the Committee be authorized to use their best endeavors to have it passed by the Congress of the United States, at such time as in their judgment it seems proper and wise

Resolved, That the members of this Association do all in their power, by urging upon their representative members of Congress to have this Bill passed

Resolved, That this Association appropriate the sum of one thousand dollars, or so much thereof as may be necessary, for the use of the Committee in the endeavor to have this measure passed by Congress Respectfully submitted,

U O B Wingate, M D , Chairman of Committee

Dr Harris of New York—I move that the report be accepted and the resolutions contained therein be referred to the Business Committee. Seconded

Dr Bulkley of New York—I desire to say that we have no meeting of the Business Committee tomorrow, and I would suggest that the motion be so changed as to refer these resolutions to the Business Committee with power to act

Dr Harris—I accept the suggestion

Dr J N McCormack of Bowling Green, Ky —I would like to move to amend the original motion by adopting the resolutions as presented by the Committee instead of referring them to the Business Committee, because they have been well formulated by the Committee, and I think we are ready to adopt them

I therefore move that the report be received, the resolutions as read adopted, and the Committee continued Seconded

Dr I N Love of St. Louis, Mo —I would move that the motion be so changed as to strike out the words which give the Business Committee power to act, and report back to the Association next year Seconded

Dr John B Hamilton of Chicago—Is that motion debatable?

The President—Yes, sir

Dr Hamilton—Such action will simply defer this matter for one year This Association then will be powerless to make any recommendation to Congress in regard to legislative matters for another twelve months This Committee has been seven years in preparing this Bill and the resolutions They are the outcome of the growth of public sentiment in respect to this question Why then should we refer this report with the resolutions to a committee who have really no business with the subject? The Business Committee did not consider it. The Business Committee is not capable of considering so important a matter in a short time which has required this Committee years of thought and study The State Medicine Section, a Section organized by the Health Officers in general of the States of this Union, comprises a body of men who are capable of thoroughly considering this question and they have done so Why then should the report be postponed for another year without action when seven years have already been devoted to it. (Applause)

The President—I will read the final resolution in regard to this report, and then it will probably solve the trouble (Read the resolution.)

Dr D W Graham of Chicago—I rise to a point of order

The President—Please state it

Dr Graham—According to the Constitution and By Laws of this Association, all appropriations of money must be referred to the Board of Trustees

The President—The point is well made

The President—Dr Love moves to strike out the words "to act "

Dr Love—I will withdraw my motion In discussing this matter, I desire to draw the attention of the members to the fact that this Committee has been continued from year to year at the expense of the Association The appropriation of money is contemplated in the consideration of this matter, and it does seem to me that it should be referred to the Board of Trustees who handle the money and are financially responsible That point should be kept in mind, and I only make the point in discussing the resolution as presented by Dr Harris

Dr W T Bishop of Pennsylvania—As this is clearly in conflict with the regulations of the Association, I move that that part of the report referring to the appropriation of $1000 be omitted I think the Secretary of the Business Committee is entirely off in his assumption and presumption in claiming entirely too much for that Committee I do not think the Association, when it created this Committee, intended to turn over its whole business to a body of a dozen or two men It [illegible] C[illegible]tee should consider new resolutions, and not that reports of Committees like this shall be referred to it. I raise this point against it and the motions are out of order (Applause)

Dr D W Graham of Chicago—Mr President, I again raise the point of order, that all appropriations of money must be referred to the Board of Trustees I therefore move, as an amendment, that the report with the resolutions be adopted, except the provision calling for an appropriation of $1000, and that this amount or so much thereof, as may be necessary, be referred to the Board of Trustees with power to act. Seconded

The President put the motion as amended by Dr Graham, which was carried

The President—We will now listen to the report of the Committee on Nominations

The report was read by the Chairman, Dr H O Walker of Detroit, as follows

Denver, Colo, June 8, 1898

Mr President and Gentlemen of the Association

The Committee on Nominations beg leave to present the following report

OFFICERS

President—Dr Joseph M Mathews, Louisville, Ky
First Vice President—Dr W W Keen, Philadelphia, Pa
Second Vice President—Dr J W Graham, Denver, Colo
Third Vice President—Dr H A West, Galveston, Texas
Fourth Vice President—Dr J E Minney, Topeka, Kan
Treasurer—Dr Henry P Newman, Chicago, Ill
Librarian—Dr George W Webster, Chicago, Ill

TRUSTEES

Dr Alonzo Garcelon, Lewiston, Maine
Dr T J Happel, Trenton, Tenn
Dr I N Love, St Louis, Mo
To fill vacancy Dr H L E Johnson, Washington, D C

MEMBERS OF THE JUDICIAL COUNCIL

Dr S Bailey, Mt Ayr, Iowa
Dr D R. Brower, Chicago, Ill
Dr N S Davis, Chicago, Ill
Dr H D Didama, Syracuse, N Y
Dr D Mason, Spokane Falls, Wash
Dr F T Rogers, Providence, R. I
Dr Milo B Ward, Kansas City, Mo
To fill vacancy, Dr W S Jones, New Jersey

ANNUAL ORATIONS

Medicine—Dr J C Wilson, Philadelphia, Pa.
Surgery—Dr Floyd W McRae, Atlanta, Ga
State Medicine—Dr Daniel R Brower, Chicago, Ill

Next place of meeting, Columbus, Ohio Time, first Tuesday in June, 1899

Chairman of Committee of Arrangements, Dr Starling Loving, Columbus, Ohio Assistant Secretary, Dr E W Woodruff, Columbus, Ohio

The following communication was received from the Board of Trustees

The Board of Trustees hereby recommend that hereafter the local Committee shall provide free of expense to the Association, first, a hall for the general sessions, second, halls for Sections, third, rooms for committees, fourth, room for post-office and force thereof, fifth, room for registration and force thereof, and the Committee shall have the proceeds of the exhibition hall, and that hereafter this arrangement shall be agreed to by the representative of the local Committee before agreeing to a place of meeting for the Association meeting

This communication was adopted unanimously by the Committee before selecting a place of meeting

[Signed] H O Walker, *Chairman*

E D Ferguson, *Secretary*

Dr X. C Scott—I move that the report be adopted Seconded and carried

The President—We will now listen to a report from the Business Committee

The Secretary of the Business Committee made the following report

REPORT OF THE BUSINESS COMMITTEE. June 9, 1898

Your Committee would report that it has had fourteen matters referred to it by the Association, which were all fully considered by sub-committees and the Committee at large, in a very full meeting lasting several hours, and upon the matters would report as follows

1 *President's address* —While the Committee is fully in sympathy with the recommendations of the President as to the admission of members to the Association under the conditions mentioned, under the existing laws of the Association the Committee does not feel competent to recommend its adoption Adopted

2. *Report on the Rush Monument Committee's Report* —The Business Committee commends the Committee for its efficient work in a noble cause, and expresses the hope that it may soon fully accomplish the purpose for which it was appointed

The Business Committee approves of the nomination of H D Holton, M D, of Vermont, for the office of treasurer, and recommends his election Adopted

3 *Rush Monument Committee* —The Business Committee desires to report that Dr Gihon, the Chairman, has been misinformed as to the payment of traveling expenses of the Business Committees They receive no pay and do not ask any, and we recommend that the traveling expenses of the Rush Monument Committee be not paid We do recommend that expenses of postage and stationery and other absolutely necessary expenses be paid

The Business Committee recommend the acceptance of Dr Gihon's resolution, and that the Permanent Secretary be instructed to communicate with the State and Territorial Medical Societies, asking them to nominate representative members of the Rush Monument Committee Adopted

4 *Treasurer's report* —The Committee would report that so far as they can learn the report is entirely satisfactory, and the Committee would congratulate the Association on the most excellent state of its finances As the Treasurer's accounts are under the control of the Trustees and his accounts audited by them, the Committee did not attempt any investigation or examination of vouchers Adopted

5 *Dr Reynolds' resolution in regard to the Association of Medical Colleges* —The representative to the Southern Association of Medical Colleges, representing fourteen Colleges, appeared before the Committee and assented to the action The Committee, therefore, recommends the adoption of the resolution of Dr Reynolds Adopted

6 *Dr Lautenbach's resolution in regard to school books* —After discussion the Committee adopted the following resolution 1 That whereas the American Medical Association sustains no such relationship to publishing houses or boards of education as would enable it to bring such text-books under the supervision of any Committee of the Association, and therefore it is powerless to create a Committee that could do this work as contemplated by the resolution mentioned And, 2, That the work contemplated by the resolution would involve much time and labor and the selection of men peculiarly fitted to perform the task in a credible and satisfactory manner, whose services could not be secured without adequate compensation, for which there is no provision Your Committee therefore, declare the purpose of this resolution to be both without the province of the American Medical Association and unpractical

Association voted to concur

7 *Dr Hare's resolution of amity* —While the Business Committee is in full sympathy with and endorses the idea conveyed in the proposed resolution, it feels that it involves questions which do not properly come within the province of the Committee to decide, but belong to the Association at large It would, therefore, refer back the resolutions to the Association, with the accompanying proof that identical resolutions were passed by a very large majority at the Baltimore meeting, but before the vote could be announced the matter was laid over for a year, as involving a change in the Constitution Although notice was then given that it would be brought up the following year, as an amendment to the Constitution and By laws, such notice was for some reason omitted from the printed program, and so the matter was not brought up

Affidavit of Mr Wm Whitford, official stenographic reporter:

"A resolution identical with that offered by Dr Hare this morning, June 8, was passed at the Baltimore meeting Before the vote could be announced the matter was laid over for a year, as involving a change in the Constitution"

Whereas, In times past circumstances have occurred which have deprived the Association of the presence and co operation of many members of the profession of high standing, who have contributed much to the advance of medicine and surgery, therefore, be it

Resolved, That this Association invites the New York State Medical Society, the New York County Medical Society, the New York Academy of Medicine and other societies of good and regular standing to send delegates to this Association, who will be received and accredited upon proper credentials from the officers of such societies, and, *Resolved*, That all acts or ordinances contrary in spirit or letter are hereby rescinded

The President—Can the Secretary inform us whether the minutes of the Association will show any of these facts?

The Secretary—I have not the minutes of the previous meetings of the Association with me

Dr H A Hare of Philadelphia—Mr President, I have been asked why I offered the resolutions, and——

The President—As soon as a motion is made to receive the report, the Association will hear you, Dr Hare

Dr Hare—I move, Mr President, that the report of the Business Committee on the resolutions offered by me be received, as this has to be done before the Association votes on it. Seconded

Dr W P Munn of Denver—I rise to a point of order

The President—Please state your point of order

Dr Munn—Any resolution or resolutions involving questions of ethics, according to our Constitution, must be referred to the Judicial Council It was an error in the first place to have referred these resolutions to the Business Committee, and they should now be referred to the Judicial Council

The motion of Dr Hare was put and carried

The President—The Association will do Dr Hare the courtesy of listening to his explanation in regard to this matter,

Dr Hare—Mr President, I have been asked why I offered those resolutions yesterday, and with the permission of the Association I would like to explain the reasons therefor It is unknown to many members of the Association that at the present time there exists in New York State two sets of medical bodies, two State medical societies, two county medical societies, one of the State and one of the county medical societies have a right in this Association by the rules of this body, and they possess that right at the present time by inheritance or heredity The other county society, a much younger organization, but nevertheless a much more powerful one, both in numbers and in the large amount of scientific work which is contributed each year, has not been admitted to this Association It is a fact that these two organizations have not adopted in their constitution and by laws a rigid code of ethics to govern the entire body and which brings each individual member under the care of their censors Each member in these societies is supposed to do what he believes is right, and not what he believes is wrong This association, the Society of the County of New York numbers about thirteen hundred members, while the New York County Association numbers about nine hundred members It is with the object of admitting, under certain restrictions, the thirteen hundred members of the County Society to our meetings that my resolution was offered I would not counsel for one moment that that those who consult with irregular practitioners should be admitted to this body with equal rights with ourselves I desire that every man who comes from the New York County Society or the New York State Medical Society shall sign our code of ethics (applause), and, sir, in the resolutions you will notice that the Judicial Council is empowered to state what society shall come in, so there is no danger of this Association being snowed under by irregular societies or by irregular practitioners It is simply my wish that the members of this prominent and scientific society, men who are prominent because of their scientific ability, who may not agree on minor points regarding the code of ethics, should have the privileges of the AMERICAN MEDICAL ASSOCIATION

We have heard a great deal within the last few days about a united country and a united profession Only a night or two ago the Toastmaster at the joint dinner proposed the toast, Is There a North? Is There a South?" And our honored President, whom we have elected today, rose to his feet and in the words which all Kentuckians say so well told us there was no North and there was no South, that the different sections of this country were welded together Is this AMERICAN MEDICAL ASSOCIATION, composed of scientific and enlightened men, going to keep up its petty quarrels because of the societies I have mentioned? There is no North, there is no South, and there is but one AMERICAN MEDICAL ASSOCIATION, there is but one medical profession in America, and there is no irregular medical profession in this country It is for these reasons that I offered the resolutions yesterday

I now move, Mr President, the previous question, and I ask that the roll be called and the ayes and nays be recorded on the previous question and the original resolution, and I would remind the convention that only delegates can vote

Dr X C Scott of Cleveland, Ohio—I desire, gentlemen to reply to the speech of Dr Hare and set forth the facts, as well as the true history of this matter

The President—In a spirit of fairness, in order to have this matter settled (and I understood Dr Hare to say that he wanted the matter settled), I extended him the courtesy of the floor, and now he moves the previous question Is this letting the matter come before the Association in the proper way? I would not have heard Dr Hare on this question did I not expect a fair and full statement of the other side of the case, because the point of order raised by Dr Munn was well taken I will ask Dr Hare whether he insists upon the previous question

Dr Hare—In view of what you have said, Mr President, I desire temporarily to withdraw my motion until Dr Scott has been heard

Dr E D Ferguson of Troy, N Y —A word or two on this subject, Mr President The point is this Dr Hare has succeeded in presenting one side of the case I am from the State of New York I am Secretary of the New York State Medical Association, and before this question is closed I would like an opportunity to say a few words after Dr Scott has spoken

Dr Scott—There is a history connected with this question The New York State Medical Society is not a young society It was formerly a constituent of this body, it sent its delegates to this body But in 1881 it passed a resolution to consult with whom they pleased and decided that it would have no code In 1882, at our meeting in St. Paul, its delegates presented themselves, but were refused admission by the Judicial Council The matter then remained quiet until 1891, when some members of the New York State Medical Society came back and were admitted to membership on proper qualifications And finally this matter was raised in Washington in 1891 In 1892 it was decided by the Judicial Council that they could not be admitted, but, upon the representations of the members of the New York State Medical Society who were present at the Detroit meeting, a committee was appointed by this Association to confer with a committee from the New York State Medical Society to see whether this matter could not be brought about. Now, what was the result of that commission we sent out? We were simply informed that a union could be brought about only by acceding to the terms of the former, and this action was reported at Milwaukee This Association then passed a resolution to the effect that it would never consider this question in any other light This matter does not come from the New York State Medical Society asking for admission upon proper qualifications, but from gentlemen entirely outside of that Society I think it is time for us to consider a request when they present it, and any other plan would result in stultifying and making ourselves the laughing-stock of all communities (Applause)

Dr I N Love of St. Louis—I desire simply to present this thought I have studied the question carefully from the various standpoints, and I am satisfied that this Association desires to keep Dr Scott in the Judicial Council I am glad he is there, because he is the watch dog of this body If I interpret the resolutions of Dr Hare rightly, they permit many able and scientific men of the profession in New York County to enter this Association They were in the minority, and they could do nothing, as their hands were tied These resolutions of Dr Hare permit them to enter this Association on the same terms individually as we do Dr Scott has made the point that members of the State and county societies have presented no request, and that it has been done by outside parties How can they, in the name of heaven, when they cannot get in here? (Laughter) I think, Mr Chairman, if the point is made that these gentlemen can individually join the Association by signing its rules and regulations and code of ethics the same as the rest of us do as individuals, I certainly would favor the suggestion of Dr Hare

Dr C Lester Hall of Kansas City, Mo —I would like to ask if this is a delegated body?

The President—Yes, sir

Dr E D Ferguson—I will endeavor to be brief in my remarks, for Dr Scott has practically covered the field He has been accurate with the exception of two or three dates which are immaterial as to the essential question under discussion I wish to state, however, a few things familiar to many of the delegates on the floor, but unfortunately are not familiar to a majority of the delegates and to the majority of the profession throughout the country This is a very tender and very serious question We of the New York State Medical Association, entitled to representation here, regret as much as Dr Hare or any member of the profession in this country that all of the members of the medical profession in the State of New York are not entitled to representation in this body But, Mr Chairman, it is their own fault. They deliberately—and I will not go into a detailed history at this time—cut themselves off from this Association, and they were told by such action they were cutting themselves off They said, "we do not care, the AMERICAN MEDICAL ASSOCIATION is only a junketing affair and we are the scientific medical association of the State of New York, we do not want anything to do with them, they will come to us bye and bye" The AMERICAN MEDICAL ASSOCIATION, Mr Chairman, was not as large an organization then as it is today This was fifteen years ago But the AMERICAN MEDICAL ASSOCIATION has grown, and it is now desirable for these men to come into the Association and participate in the transactions of this body and to read papers As the Secretary of the New York State Medical Association since its organization, I have been cognizant of the wishes of men to do this thing, and I have been repeatedly asked if there was not some way by which these men would be entitled to the privileges of this floor They have not as a body given at any time any sign that they wished to come back into full fellowship with this Association. The AMERICAN MEDICAL ASSOCIATION, under the Presidency of Dr Marcy, appointed a committee to meet with a committee from the New York State Medical Society and a committee from the New York State Medical Association to see if this matter could not be arranged The New York State Medical Society said it had no occasion to appoint any committee, yet in the face of all these facts the New York State Medical Society, the elder organization not the younger, one of the pioneer bodies, in fact the pioneer body in the organization of the AMERICAN MEDICAL ASSOCIATION, for Dr N S Davis was then a member of the New York State Medical Society, in spite of these facts, they have rejected, in every possible way they could do officially, efforts to reinstate themselves in the AMERICAN MEDICAL ASSOCIATION Now, we have here resolutions inviting these bodies to send delegates These gentlemen are said to come here pure and holy because they can subscribe to our Code of Ethics If they can do this the door is open for them, for they can join their local organizations in New York and come here as delegates (Applause) No worthy man will be refused membership in the organization who is entitled to representation here We are not here fighting for our existence and against bodies entitled to representation in this Association We feel that every member of the AMERICAN MEDICAL ASSOCIATION should stand by us, because at the expense of a good deal of time and labor and a great deal of trouble and mental affliction, we have stood by what we believed to be the cardinal principles of the organization of the AMERICAN MEDICAL ASSOCIATION (Applause)

Mr Chairman, now, they say, these men can come here and be received as delegates Delegates from what? Delegates from a body which has spat contumely upon us and has never withdrawn it. Are we to ask and beg the New York State Medical Society to come back into the fold of the AMERICAN MEDICAL ASSOCIATION? (Cries of "No! No!") Was there anything in any part of the Code of Ethics that put them out? No It was their own voluntary act. It is absurd that an organization like this should ask men to become fellows who have by every official act they have committed said they wanted no fellowship with us (Applause)

Dr W P Munn of Denver—Mr Chairman and members of the Association, Colorado desires to take a little time outside of its entertainment to say a few words upon these resolutions The resolutions offered by Dr Hobart A Hare of Philadelphia are the inoculated scalpel by which it is proposed to introduce the sepsis of commercialism into the AMERICAN MEDICAL ASSOCIATION (Cheers and cries of "Good! Good!") (Here Dr Hare interrupted the speaker and was informed by the President that Dr Munn had the floor)

Dr Munn (resuming)—I had nothing to say while Dr Hare held the floor Dr Hare is a delegate to this body from Pennsylvania It is eight years now since I left my home in that State to come to Colorado I know from many visits among the practitioners of Pennsylvania that today I can voice the sentiments of the profession there more accurately, more faithfully, more truthfully than Dr Hare can before you today (Applause) These are the resolutions of Dr Hare and they could not carry for one moment before the State Medical Society of Pennsylvania There are members of the State Medical Society of Pennsylvania here and if I am wrong let the majority of them correct me In this Western country we have had all we could do to uphold the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION, but we have done it. We have had all we could do to keep out the dead rot of commercialism, and are we going to be trodden down by this derelict, dead, rotten society of New York which is continually sending—(Cries of "No!" mingled with hisses, the final words of the sentence being inaudible)

Dr Jackson of Philadelphia—I came here as a delegate from Philadelphia I sincerely hope that this question will be decided once and for all Let us understand what the question is The question is, Shall the AMERICAN MEDICAL ASSOCIATION be a representative body, representative of the local organizations of the profession throughout the country, or shall it consist of individual members attracted to the meeting who represent themselves? This is the question we have to decide, and I hope it will be decided now once and for all

Dr Hare—I simply wish to say, Mr President, that I had no intention of making erroneous statements, if I did make them In withdrawing my previous question temporarily, I did so as a matter of courtesy I tried in my remarks to use no language which would be offensive to either side of the question, but I regret, sir, that language has since been used which I think is offensive I want to say to this Association, that I am the last man in my State to do what has been referred to by Dr Munn We have in New York State a large body of practitioners who want to come back to this Association Let them come to us, let them sign the Code of Ethics, and the thing which has been referred to with strong adjectives will have the life sapped out of it.

Dr W T Bishop of Harrisburg, Pa.—Mr President, I rise to a point of order

The President—Please state it.

Dr Bishop—If the resolution introduced by Dr Hare is passed it will contravene the organic law of our Association If we desire to admit these men, we must change the organic law so that we can admit them But do not let us admit them and override the law The organic law of this Association provides that of the several State and several county societies, there shall be but one State and one county society in each State and in each county Now, then, because it does contravene the law the resolution is out of order, and there is no necessity of introducing these personal reflections There is no necessity of introducing misstatements I make the point of order, then, that this matter is in contravention to the organic law of the Association, and the whole matter is out of order

(The Chair sustained the point of order amid laughter and applause)

8 *Dr Keen's resolution for the dissemination of scientific knowledge*—After discussion this was recommended as follows Your Committee, to whom was referred the resolution of Dr Keen, relative to the appointment of a co operative committee of five who should consider the desirability of formulating plans concerning experimental research, would respectfully report that inasmuch as the province of such committee is but to consider the desirability of formulating plans for such a purpose, we would, therefore, endorse the resolution and recommend the appointment of such a committee Adopted

9 *Dr Gould's resolution as to medical libraries*—After discussion these were recommended for adoption by the Association Adopted

10 The invitation from the Mayor of Chicago and others to hold the next meeting of the Association in that city, was referred to the Nominating Committee

11. *Dr Bailey's resolution in regard to the appointment of a new general secretary*—After a full discussion it was decided that it was infeasible to attempt to put it in operation this year, and the following report of the same was sent to the Association "While the Committee fully agree as to the desirability of having much more active secretary work done for the Association, and believe that the plan proposed would greatly increase the scope and usefulness of the Association, it is not prepared at the moment to recommend the adoption of the resolution It is a matter of such very great importance that further consideration of the details involved is necessary, and as it may possibly involve a change in the Constitution and By-Laws, your Committee has decided to recommend that the matter lie over for one year, and hereby gives notice that it proposes such changes, if any are necessary, in the Constitution and By-Laws at the next annual meeting of the Association."

Dr William Bailey of Louisville—This resolution came to me as representing the majority of the Business Committee It was the wish of the Committee that I present this resolution in the interests of the Association from the floor I wish to state before the Association that I was not actuated by any antagonism to our worthy Secretary, Dr Atkinson This is all I desire to say

Dr I N Love—Inasmuch as this pertains to the expenditure of money, I move that it be referred to the Board of Trustees Carried

Report as amended was accepted

12 *Dr Stone's communication in regard to a permanent badge for membership in the Association*—Dr Stone appeared before the Committee exhibiting the badges and a drawing of them, and explaining the desirability of the same After discussion the following was adopted "The Committee report in regard to the proposal of Dr Stone in regard to a permanent

badge or button for members of the American Medical Association, that in their opinion such a badge, or any badge, for permanent use, would neither add to the dignity of the individual members nor increase the efficiency of the Association and would, therefore, recommend that Dr Stone's proposal be not accepted "

Dr D S Reynolds—I move to amend the report of the Business Committee to this effect

Resolved, That the proposed official button presented by Dr French Stone of Indiana be and it is hereby accepted and adopted as the permanent badge of the Association Seconded

Dr L Connor—I think the Code of Ethics prohibits dealing in patent instruments

Dr I N Love—It is desirable that we should have a permanent button that we can wear the year round This button, as I understand it, is from the best men of Indiana and Kentucky and has been carefully considered by them It is a beautiful and attractive button, and I think would settle the question favorably and it would then be available for all of us It would go with our credentials, and I therefore would like to see it adopted

The President—The point of order made by Dr Connor is not well taken

Dr G C Savage—I do not think any action this Association can take would give more dignity or would tend to increase the membership more largely than the amendment offered by Dr Reynolds As a member of the Association I would feel proud to wear this button

The amendment of Dr Reynolds was adopted

13 *The communication from the Ohio State Medical Association in regard to a special committee on National Legislation* —After discussion the Committee adopted the following recommendation to the Association "The Committee would report that it does not see its way clear to the efficient working of such a Committee on National Legislation without considerable expenditure of the funds of the Association, and does not therefore recommend the appointment of such a Committee " The Association concurred in the report

14. *Dr Horner's plan for a Medical Relief Association* —The Committee would report that the same matter was referred to them last year, and that they reported as follows "The recommendation and resolutions were referred back to Dr Horner as impracticable at the present time, but with the approval of the Committee as to the general plan " After further extended consideration of the subject your Committee do not see their way clear to recommending the adoption of the plan Adopted

Dr Gihon moved that this action be reconsidered Carried

Dr Gihon then moved that the matter be laid on the table Carried

Dr Sanders asked what disposition had been made of the resolutions offered by him at a previous session He said that it was desirable that the report be made early He would like to have the voice of the Committee expressed as early as possible

On motion of Dr D S Reynolds, the resolutions were referred to the Business Committee with power to act

Dr J B Murphy of Chicago then delivered the Oration on Surgery He selected for his subject, "Surgery of the Lung "

On motion, Dr Murphy was extended a vote of thanks for his able and instructive address, after which the Association adjourned until 11 a.m Friday

(*To be concluded*)

BOOK NOTICES

Clinical Lectures on Diseases of the Heart and Aorta By George William Balfour, M.D , LL D , F R.C P , F R.S Third Edition pp 479, 8vo, cloth Edinburgh Adam & Charles Black, 1898 , A C McClurg & Co , Chicago

Mr Balfour has been so long and favorably known in this country as an author on diseases of circulation, especially for his observation and treatment of aneurysm and cardiac diseases that he needs no introduction in America We may say, however, that this volume, the first edition of which was issued in 1875, has been entirely revised and rewritten and considerable new matter has been incorporated and there is no question but the new edition will be as favorably received as its predecessors

International Clinics A Quarterly of Clinical Lectures Edited by Judson Daland, M.D , Philadelphia , J Mitchell Bruce M D , F R.C P London , David W Finlay, M D , F C P Scotland, pp 355 Philadelphia J B. Lippincott Company, 1898

The records of cases can never become stale or useless even though the remarks made upon them at the time may become obsolete by the changes of time, for that reason the case records embodied in these series will always be useful and instructive and may be referred to years after the date of their publication

For the practitioner who desires to keep pace with the existing practice of the times in all branches and be in touch with the current fads and improvements of medicine and surgery, he can accomplish his purpose in no better way than by the careful perusal of the volumes of this series

Outlines of Practical Hygiene By C Gilman Currier, M.D Third Edition, revised and enlarged, 8vo, cloth, pp 482 New York E B Treat & Co , 1898

This revised and enlarged edition incorporates the essentials of sanitary science of practical hygiene It is largely used as a *text book* *This work is extremely well written and of great* value to the sanitarian, civil engineer and practicing physician

Report on Bubonic Plague Being a report based upon observation on 939 cases of Bubonic Plague, treated at the Municipal Hospital for infectious diseases at Arthur Road, Bombay, from September 24, 1896, to February 28, 1897, by Khan Bahadur N H Choski, Extra Assistant Health Officer Bombay Municipality, Bombay, printed at the "Times of India" Steam Press, 1897

This contains the most complete report of the cases during the late Bubonic epidemic at Bombay that has appeared Fifty four autopsies were made of the cases, 47 by the members of the Austrian Plague Commission and the remainder by the hospital staff Nearly one half of the bound volume is occupied by clinical charts

We referred to this in our editorial on p 29 of the current volume

Illustrated Skin Diseases An Atlas and Text with special reference to Modern Diagnosis and the most Approved Methods of Treatment, by William S Gottheil, M D

This work, three portfolios of which have been issued, will be issued in quarter portfolios, each containing 24 quarto papers, a text with numerous formulæ and four plates of cases from life, by a new photographic process

The illustrations are accurate and numerous, and the plates are extremely life like We shall look for the succeeding portfolios with interest, and in the meantime compliment the author and the publisher on the splendid series so far presented

The Purification of Public Water Supplies By John W Hill, Consulting Engineer, etc., etc , 8vo , cl , pp 304 New York D Van Nostrand Co , 1898

This work is a continuation of a series of lectures and papers on the quality of public water supplies which the author has read before several scientific societies and in universities during the past five years, and presents briefly

1 The facts and causes of pollution of sources of public water supplies

2. The effect of this pollution on the typhoid fever rates of our larger cities

3 Illustrates by few examples how typhoid rates have been reduced by the introduction of water from purer natural sources and by filtration of polluted water

Data are given on the methods of construction and operation of sand filters with the cost of filter construction In these days when health officers and [illegible] erally are [illegible] the [illegible]rtance [illegible]igor- [illegible]n and [illegible]

MISCELLANY

Boasting of No Use —We observe with a great deal of pain, almost amounting to sorrow, that our great and good friend, the *Medical Record*, one of Wm Wood and Company's publications, is inclined to amuse itself by the publication of incomplete and incorrect reports of the last annual meeting in advance of the other medical journals, and particularly in advance of the report by the JOURNAL The JOURNAL in printing the reports of the Transactions of the ASSOCIATION must have them officially correct, consequently it can not take them from any person but the proper officers of the ASSOCIATION If the example of the *Record* were followed, it would be quite easy to fill the JOURNAL with pages of half edited and incorrect matter, largely taken from the lay press at the place of meeting Reference to this subject was made necessary by the Paracelsian bombast of the *Record*, whose Spanish like tendency to mislead its unfortunate constituents is matter for sincere regret

THE RECENT MEETING OF THE AMERICAN MEDICAL ASSOCIATION

It is so well known that the *Medical Record* is always ahead of its contemporaries in printing the medical news of the day and reports of important meetings throughout the world, that it seems almost superfluous to remind our readers again of its pre eminence in this respect The report of the Denver meeting of the AMERICAN MEDICAL ASSOCIATION was given to our subscribers complete two weeks ago Some other journals are still stringing it along in their columns, and it is almost pathetic to read the apology of the official journal of the Association in its issue of June 25th, for its neglect promptly to print the proceedings, even of the general sessions —*Medical Record*, July 2

Bacterial Pathogenesis of Biliary Lithiasis —The *Presse Méd* of May 21 contains a study of this subject describing experimental lithiasis produced by biliary infections, and the microbes found in human calculi They are always the bacillus coli or Eberth's bacillus, the calculi result from a catarrhal and desquamating angiocholecystitis which they set up The conditions that favor the ascension of the bacilli into the biliary passages are mechanical or due to alterations in the secretions, or both These factors may be inherited, imparting a predisposition to infection, possibly favored by some congenital special disposition of the biliary passages

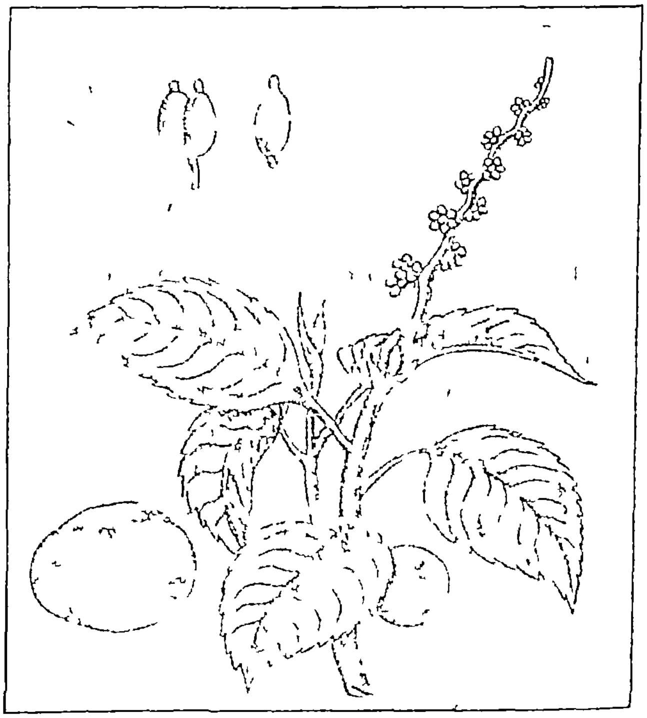
Liver Abscess Due to Ascaris Lumbricoides —Another case is reported from the Greifswald clinic, making the nineteenth on record When the abscess was evacuated a lively worm was found in the contents The extreme tension of the abscess seems to prove that the worm could not have entered it secondarily, as the contents would have been forced out through any hole large enough to admit it As it primarily found its way into the liver it probably carried infectious germs with it which set up the abscess —*Deutsche Med Woch* , May 19

Cancer of the Thoracic Duct —Troisier has observed three cases in which a cancer of the uterus, stomach or suprarenal was accompanied by inflammatory proliferation and cancerous vegetation nearly the whole length of the thoracic duct Only one other case is on record (Weigert's) A left supraclavicular adenopathy was present in each case, to which he has already called attention as valuable in the diagnosis of cancers of the abdomen The occlusion of the thoracic duct was not accompanied by any retention of chyle in the intestinal lymphatics, showing that the lymph must be carried over some collateral route —*Presse Méd* , May 21

Official Advice for the Soldiers in Cuba —Before embarking for Cuba, Lieut Col Benjamin F Pope, Chief Surgeon of the Fifth Army Corps, General Shafter commanding, issued a memorandum of instructions to the troops, with the view of protecting them from insanitary influences during the service before them in the Island of Cuba

The Chief Surgeon issues the following memorandum of instructions to the soldiers of this command for the preservation of their health in the tropics The body adapts itself readily to changes of climate You do not require any special preparation for the climate of Cuba You should meet the heat in the same way that you do in the summer season in the North Avoid, therefore, the use of medicines that are recommended to protect the body against the action of climate The danger in the tropics does not come from the direct action of the climate The danger is due to the presence in some districts of the warm country of the microbes of certain diseases There are no medicines that will protect us from these diseases The chief measures for their prevention will be instituted by your commanding officer Do not take quinin regularly when your health is good Do not take purgatives when the bowels are regular Drink boiled water when you can not get natural spring water Stagnant surface water is specially dangerous If possible drink water only at meal time The fruits of the country are wholesome when eaten in season Avoid unripe and unsound fruits Peel all fruits before eating Use as little alcoholic beverages as possible The clothing should be light and loose When wet from rain or sweat remove it for drying, and rub the body briskly with a towel Bathe in running streams, once a day if possible Keep the body clean If exposed to draughts when perspiring freely put on some extra covers Sleep with dry clothes The health of the Command will depend, to a great extent, upon the strict observance of orders not to communicate with suspected people or places All sickness should be reported at once to a medical officer

Beware of the Manchineal Tree —The following circular, prepared by Dr J T Rothrock, Commissioner of Forestry, Department of Agriculture of the Commonwealth of Pennsylvania, has been published and distributed by direction of Hon Daniel H Hastings, Governor of the Commonwealth



Branch and fruit of Manchineal tree

SOLDIERS!

BEWARE OF THE MANCHINEAL TREE!!

It grows along the sea shore in Cuba, and the West India Islands generally

It is from forty to fifty feet high, has oval, pointed, toothed, shining leaves, which are from three to four inches long

When the fresh leaves are pulled off a drop of milky juice comes from the leaf stem

The fruit is a yellowish green, fragrant, and somewhat resembles an apple in shape

If bitten into it makes the mouth very sore for a time and may produce serious results

After handling any part of the tree—root, leaves or fruit —rubbing the eyes may cause them to become seriously inflamed

Mucous membranes (such as the red margin of the lips, eyes, or anus) are particularly subject to its poisonous effect

It is said by many of the natives to cause poisonous effects even if the tree is not touched but by simply being in its neighborhood

Many persons are alleged to have been injured from being under the tree during a shower when the drops of water fell upon them from the tree

Some persons are more sensitive to the effect of this poison than others In fact there are a few who are not affected by it at all, just as is the case with our poison oak or poison ivy the chief difference being that the manchineal affects the mucous membranes, above alluded to more than the skin proper whereas the poison ivy affects the skin much more frequently than it does the mucous membranes

Many persons of experience in the tropics assert that it is unwise to camp near this tree

If poisoned by the manchineal and beyond reach of your surgeon's help, the best thing to do is to wash the part affected freely with salt water

It is sometimes called by the natives manzanilla (pronounced man za ne ya)

Local Anesthesia in Operation – In the *Annals of Surgery* for May, Lilienthal of New York reports observations made on the effect of cocain, eucain and nitrous oxid in the performance of operations rarely done without ether or chloroform narcosis, during the last three years He considers eucain the best local anesthetic Compared with cocain solutions of greater strength are required but eucain is far less poisonous and stronger solutions may be safely employed He generally uses from 6 to 10 per cent solutions and in over fifty cases has not noted a single instance of toxic symptoms He finds that injection of five grains of the hydrochlorate in one sitting is usually sufficient for an operation of considerable magnitude, e g , herniotomy, but he has used as much as nine grains. He finds the benumbing power of eucain is quite as certain as of cocain and has never seen [illegible] with cardiac failure which often follows cocain in smaller doses Eucain has a very persistent effect and on the mucous membranes does not act quite so effectively as cocain [illegible] contact On this account, in operations on tissues covered by mucous membrane, he usually applies a little cocain solution first and then injects the eucain If the operation is to be a severe one or prolonged, he gives the patient a small dose of morphin a quarter of an hour before, for the effect on the mind He usually promises the patient to employ general narcosis if the patient finds that he is unable to bear the pain but in no case has it been necessary so to do While the skin is perfectly anesthetized, the tissues beneath it are not and section of muscle causes a dull pain not hard to bear, but section of tendon is not felt In some operations the absence of the unconsciousness accompanying general narcosis makes the work easier, as in herniotomy where the rupture is small and easily reducible The patient under local anesthetics can bring down the hernia by coughing or voluntary straining, while in general narcosis the surgeon would be obliged to wait for vomiting or some other reflex strain Again in tendon suture, voluntary motion supplies at once the physiologic test as to whether the ends have been correctly adjusted He believes that in such operations as castration, colotomy, herniotomy by the Bassini and similar methods, cholecystotomy, drainage of empyema of the thorax, etc , local anesthetics should be first choice

European Appetite for Drink —Henry W Fisher in the New York *Sunday Magazine*, June 12, states that each Dane, in the average, swallows twenty seven quarts of strong liquor yearly But the Swedes are contented with five quarts of alcohol, twelve quarts of beer and 0 4 quarts of wine each, every year Each German, taking them all in all and without reference to the different races, consumes 117 quarts of beer, nearly six quarts of wine and a little over thirteen quarts of alcohol, or strong liquors, every year But the French, at least, are a "sober people" Frenchmen drink but little beer, only twenty three quarts in the rural districts and but eleven quarts in Paris for each person per annum But they each swallow 105 quarts of wine yearly In the matter of strong liquors, they require twelve and three fourths quarts each per annum, that is, they think they do and live up to that erroneous conviction Austria Hungary is generally rated as a wine-drinking country, but is better than its reputation in one respect at least The Austrians and Hungarians each drink twenty two quarts of wine a year to this they add forty four quarts of beer and the same quantity of strong liquors as the Frenchman England's consumption of liquors allows 145 quarts of beer, 1 8 quarts of wine and 8 5 quarts of liquor to each man per annum The Belgians are tremendous beer drinkers One hundred and seventy quarts is the average quantity consumed in Leopold's kingdom, but even then they are only boys compared with the festive Bavarian The Bavarians each swallow on an average 237 quarts of beer every year In Munich each man, woman and child consumes 570 quarts of beer per annum The Frankforters wash down their Frankfurters with 430 quarts of beer each a year The citizens of Nuremberg come next with 322 quarts, the Berliners follow with 160 quarts, the Viennese with 145 quarts, the men, women and children of Moscow with twenty eight quarts

Societies

The following recent meetings are noted

California — Fresno County Medical Society, Fresno, June 7

Connecticut —Waterbury Medical Association, Waterbury, June 6

Delaware —State Medical Society, Wilmington, June 14

Florida —Duval County Medical Association, Jacksonville, June 7

Illinois —Rock River Valley Medical Association, Sterling, June 9 Vermilion County Medical Association, Danville, June 14.

Iowa —Des Moines Valley Medical Association, Ottumwa, June 23 Iowa Central Medical Society, Marshalltown, June 15 Polk County Medical Society, Des Moines, June 7

Massachusetts —State Medical Society, Boston

Michigan —Calhoun County Medical Association, Marshall, June 7 , Saginaw County Medical Association, Saginaw, June 10

Minnesota —Hennepin County Medical Society, Minneapolis June 6

New Hampshire —Dover Medical Society, Dover, June 1 , Manchester Medical Association, June 9

New Jersey —New Jersey Surgical Society, Newark, June 7 , Warren County Medical Society, Belvidere, June 7

New Mexico —New Mexico Medical Society, Las Vegas, June 4

New York —Erie County Medical Society, Buffalo, June 14 , Hornellsville Medical and Surgical Association, June 7 , Syracuse Academy of Medicine, June 14

Pennsylvania —Easton Medical Society, June 9 , Lebanon County Medical Society, Lebanon, June 14

Texas —Kaufman County Medical Society Kaufman June 6

Wisconsin —Kenosha County Medical Society, Kenosha, June 3 , Rock County Medical Society, Janesville, June 3

Philadelphia

WAR REVENUE TAX —It was rather strange that charitable institutions such as hospitals should be made to pay a part of the cost of war with Spain, but they are affected in the clause of the bill relating to inheritances and legacies, which provides that a tax of $5 on the $100 be applied to all legacies, exceeding the sum of $10,000 Philadelphia has always been known far and wide for its generosity toward its charitable institutions, but if the predictions of Provost Harrison of the University of Pennsylvania come true, some of that revenue may be diverted to other channels In a recent interview he expressed himself as follows "Hereafter we will have to pay 10 per cent. on our larger legacies, $10,000 on every $100,000 bequest we receive, for the [illegible] 5 per ce[illegible] in addition For example a [illegible] ly receiv[illegible] from Mrs John Field, of [illegible] red $5000 if this new law had [illegible] was received Such a heavy tax will have the effect of driving away large bequests It will have a very deterrent influence upon people disposed to leave in their wills large sums for charitable purposes and it is a most unwise measure " How its baneful influence will be felt can be shown by reference to legacies left to two hospitals of this city For instance, the Pennsylvania Hospital, one of the oldest charitable institutions in the United States, since 1894 has received bequests to the amount of $110,000 and under the regulation of the new war measure over $10,000 would have to be paid back into the lap of the United States Should it not be disappointed there will be at least $300,000 left to that institution during the current year The hospital of the University of Pennsylvania will also have some of its revenue cut off It is shown by proper reports that this hospital since 1893 has received bequests aggregating $172,682 67, and in two years would have been forced to pay $11,000 to the government to support this war It does seem that at least the charitable institutions might have been left untaxed

Nordau or Lombroso Might Study a Pennsylvania Professor —Those physicians of Philadelphia and the people at large who are acquainted with the recent acts of Prof George H Stephens are astounded with the awful impulse which prompted him to destroy by fire the idol of Lafayette College, Pardee Hall Educated for the ministry by the subscription of a church, it was thought that his course in Princeton College would render to the world and to them a man of great attainments According to report, however, he forgot his benefactors and accepted a position at Lafayette College as Adjunct Professor of Moral Philosophy After a residence there of about three years it is reported that his place was declared vacant, and he is quoted as saying that some insane impulse carried him onward to take revenge upon that institution, beginning first by acts of vandalism, such as damaging the chapel organ, hiding the hymn books and finally culminating in the graver crime of burning Pardee Hall

Important Factor in a Trial.—Peter E Smith, a member of the Select Council, stands charged by Walter N Stevenson, a member of the Common Council, with offering a bribe to the latter member, to control his influence in voting against the celebrated "Loan Bill," with which readers of the Journal are already familiar Smith, however, seems to have been born under a lucky star, for although the case has been called a number of times it has as often been continued When the day came for the trial Smith's family physician, Dr William Stiles, gave it as his opinion that the former's physical condition would not permit him to be tried at this time, as he was suffering from gout, heart and kidney trouble Judge Pennypacker granted a continuance

Deaths in Philadelphia —For the week ending June 25 there have been reported to the Board of Health 387 deaths. Of these 152 have been in children under 5 years of age This is a decrease of 112 over the previous week and 41 less than for the same period of last year The causes of death were Consumption, 34, cholera infantum, 34, inflammation of brain, 25, inflammation of stomach and bowels, 20, heart disease, 20, inflammation of lungs, 18, old age, 14, marasmus, 13, nephritis, 14, convulsions, 11 In addition, for the same period, there were 63 cases of diphtheria, 23 of scarlet fever and 91 of typhoid fever, from all of which there were 20 deaths

Hot Day —June 25 was marked as one of the hot days in Philadelphia At 5 A.M the temperature was as low as 68 degrees, but at 8 A M had risen to 75 degrees, the humidity at that time being 78 degrees, making the air stifling Later in the day the mercury gradually rose until the temperature was 94 degrees about 4 P M The excessive heat and humidity combined produced twelve prostrations during the twenty-four hours

THE PUBLIC SERVICE

Army Changes Official List of Changes in the Stations and duties of officers serving in the Medical Department U S Army, from June 25 to July 1, 1898

Acting Asst Surgeon Eugene H Hartnett U S A ordered from Washington, D C., to duty in U S general hospital, Ft Monroe, Va
Acting Asst Surgeon Henry S Greenleaf, U S A, ordered to report in person to the Major General commanding the Army for duty
Acting Asst Surgeon S Melville Waterhouse, U S A, at general hospital Ft Myer, Va., ordered to accompany artillery battalion from Washington Bks, D C, to San Francisco, Cal
Acting Asst Surgeon Thomas A Smith U S A, is relieved from duty on U S hospital ship "Relief" New York City, N Y, and ordered to Ft Slocum N Y for duty
First Lieut Franklin M Kemp, Asst Surgeon, to San Francisco, Cal, for duty with expedition to the Philippine Islands
Acting Asst Surgeon J W Donnelly U S A. Acting Asst Surgeon Stephen M Long U S A, and Acting Asst. Surgeon D T Lainé, U S A, ordered from Washington, D C to Tampa, Fla
Acting Asst Surgeon R Fleming Jones U S A is relieved from duty at Ft Bliss Texas and ordered to Tampa, Fla
Capt Charles E B Flagg Asst Surgeon is ordered from Columbus Bks, Ohio to Ft McPherson, Ga for duty in the general hospital
Major W Fitzhugh Carter Surgeon U S A is ordered from Nashville, Tenn to Tampa, Fla for duty with Fourth Army Corps
Acting Asst Surgeon Edwin P Hayward U S A is ordered from Kansas City Mo, to Leiter general hospital, Chickamauga, Ga
Acting Asst Surgeon C F de Wey U S A. ordered from Louisville, Ky, to San Francisco, Cal, for duty with Philippine expedition

CHANGE OF ADDRESS

Angus, D A, from 1228 to 1240 Milwaukee Av, Chicago
Beckman O H from Tyrvis Finland to Astoria Ore
Bell J W from 1600 Fourth Av to 2301 S Bryant Minneapolis, Minn
Bellamy, R, from New York, N Y to Ocean House, Newport, R I
Berry B, from 3400 Morgan to 3142 Loust St St Louis, Mo
Christofferson A L, from Lind Center to Oshkosh, Wis
Clayton C F, from 4800 N Clark to 600 W 59th St, Chicago
Cole, F M from Ida Grove to Hull, Mich
Cutter, J B from Challes Idaho, to California Hotel, San Francisco
Edwards, Mrs C, from Detroit to Cass City Mich
Fisher G C from Ann Arbor, Mich to 2601 Calumet Av Chicago
Hinsdale, G from Philadelphia Pa to Bethlehem, N H
Howard, W E, from Kasbeer to Ohio Ill
Hughes J D from Sonneberg to Coburg Germany
Johnson, T T from Starbuck to Walla Walla, Wash
Latta M J, from Equitable Bldg to Good Blk, Des Moines, Iowa
Lóve L F, from 600 S 45th St to 4107 Chester Av Philadelphia, Pa
McCassy, J H, from 126 S Ludlow to 5th and Wilkinson Sts Dayton Ohio
Malone, L A from 119 N New Jersey St to 6 Stewart Pl Indianapolis
Mason, W S from Philadelphia to Williamstown, Pa
Miles W, from Chicago to Littleton Ill
Moore, J W, from 1 W 72d to 45 W 71st St New York, N Y
Nichols, C L from 1923 Wirt St to Karback Blk, Omaha, Neb
Noyes A A from 1205 20 Avenue N to 1910 Hawthorn Av Minneapolis
O Leary, A P from Ann Arbor, Mich to The Dalles, Ore
Pampel B L From Wymore to Douglas Co Hospt., Omaha Neb
Riesman D, from 801 N 6th to 326 S 16th St Philadelphia Pa
Rogers A S from Ann Arbor to Vassar, Mich
Rogers W W, from Jones Prairie to Carlton, Texas
Schick G., from Chicago to 'The Southern Hotel,' Chicago
Sheffield, H B from 691 Prospect Av to 381 E 50th St, New York
Shoemaker S S, from Reiffsburg Ind to Eureka Springs, Ark
Taylor, P K. from 211 W 139th St New York to Kingston, R. I
Toan J W, from Portland to Otsego, Mich
Van der Veen, C, from Ann Arbor to 148 Fountain St Grand Rapids
Van Duyn A C, from 52 Cottage Grove Av to 2950 Indiana Av, Chicago
Wilder, H R. from Swanton to 25 N Union St, Burlington, Vt
Wisman, L. J from Ann Arbor to Frontier Mich
Woodward J H, from New York N Y, to Burlington, Vt
Wyland G V, from Lyndon Ill., to Marcellus, Mich.

LETTERS RECEIVED

Alma Sanitarium Co, Alma Mich, Allport, Frank, Chicago, Andrews C F Bison, Tenn

Bausch & Lomb Optical Co Rochester N Y, Becker B A, New Vienna, Iowa Bell, F A, Dallas Texas Blackburn R S Breeds Ill, Brown A P, Elberfeld Ind Bryan Geo J Syracuse N Y,

Carl I D, Boston Mass Carter Geo G, New London, Mo Carroll, C T, Jr Marvin Tenn, Case, I S Dexter, Mo, Cook, G F Oxford Ohio Corr B M, Cedar Springs Mich., Cohn, E, St Jacob Ill

Doston, B R Blakely Ga

Elliott H G, New York N Y Evans, E E, Sumner Mo

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Jelks J T, Hot Springs Ark., Jonas A F, Omaha Neb

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Malsbury J O, Peru Ind Mansfield C D Lexington Ky, Marden J K Ann Arbor Mich Marks A A New York, N Y Merrick, M B, Passaic N J Marrs, W H, Louisville Ky Mariani & Co, New York, N Y Meserve, A K P Portland Me, Mattison, J B, Brooklyn N Y Morgan, R G Indianapolis, Ind

Nelson D G Chattanooga Tenn, Newman, A L, Paterson N J, Norwood F H, Carrington Mo

Phelps R M Rochester Minn Powell E H, Omaha, Neb, Purdon, O Coldwater Kas

Richardson B London England Robertson, Jno., Cincinnati Ohio Robinson J L Monroe Iowa Rockwood, E W, Iowa City Iowa Russell L. B, Hoopeston, Ill

Savage G C, Nashville, Tenn, Scholtes F W Reade s Landing Minn Senn N (2) Washington D C, Smith F C Rowan Iowa Stauffer W H, St Louis Mo, Stearns F & Co Detroit. Mich

Taylor M B Trion Tenn Troy Chemical Co., Troy, N Y

Walker F E., Bigelow Minn Warren W M Detroit Mich Waterhouse Pharmacy Co St Louis Mo Watts Andrew J, Seymour Mo Whitacre, H J, Cincinnati, Ohio, Woodruff, E W, Columbus, Ohio

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ORIGINAL ARTICLES

THE DIFFERENTIATION OF THE CARDIAC INCOMPETENCY OF INTRINSIC HEART DISEASE AND OF CHRONIC NEPHRITIS

Presented to the Section on the Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association held at Denver, Colo , June 7-10 1898

BY FRANK BILLINGS, M.D
CHICAGO ILL

The recognition of an incompetent heart is usually not difficult The dyspnea of exertion, the sense of post-sternal weight and constriction of the chest, the cough of exertion, and upon assuming the recumbent position, the enlarged liver with tenderness and often with pain or a feeling of weight in the epigastrium, the indigestion of portal congestion, the usually scant urine, the edema of the feet, or all of the above named conditions much aggravated until constant dyspnea with orthopnea, general anasarca, excessive physical weakness, marked palor, or palor and cyanosis give unmistakable evidence of cardiac weakness The local signs of valvular disease may be absent or present Signs of cardiac enlargement with dilatation of the chambers of the heart are present and may usually be recognized

These phenomena are usually present in varying degrees of severity, in an incompetent heart When due to intrinsic heart disease a valvular lesion or some other cause of dilatation of the heart and weakness of the heart muscle is present the chronic nephritis, cardio-vascular changes occur, and especially in the form classed as diffuse interstitial nephritis In the latter stages especially of chronic nephritis the heart may become so dilated that it becomes incompetent, and the symptoms and signs enumerated appear The urinary findings, the symptoms of uremia and other characteristic signs may plainly indicate the primary nephritis In many cases, however, the differentiation can not be easily made, and in a few examples the diagnosis may remain in doubt until the side light of the dead house clears up the darkness It is with these doubtful cases that this brief paper has to deal

The following case will serve as a text and more clearly illustrate the subject

Mr W McF , aged 50 , American , lawyer , married Came to me on Sept 12, 1894, and presented the following history

Father died at 76 years , mother living, aged 72 years, and in good health One brother died of acute pneumonitis The father suffered from a tremulousness of the right arm, and the patient has had from birth a tremulousness of the right upper extremity, which is intensified by the presence of strangers, or by an attempt on the part of the patient to suppress it The intentional trembling extends to the left arm also, during excitement or other emotion

The patient has never had a venereal disease He has never been addicted to the use of alcoholic beverages or tobacco in any form He has always been well , has always had much to do in his profession, and has worried and fretted much about his affairs He has always eaten heartily of all kinds of food He has not taken physical exercise as a recreation

For a month he has noticed shortness of breath after exercise, and an unusual throbbing of the heart after exercise, after a hearty meal and when excited The strength has been noticeably less, and recently the ankles have been swollen in the evening The tremulousness of the hands has become worse Vision is less acute The mind becomes easily tired He dreads the presence of strangers, and fears to go into court with his cases He has headache, with a sense of pressure about the head and the nucha

Examination —Height, six feet two inches , weight 250 pounds , face pale and eyes puffy , tongue large, pale and covered with a white fur Muscles flabby , upper extremities tremulous, and this was increased by the excitement attendant upon the examination Abdomen large, prominent and flaccid Liver area apparently normal , spleen not palpable Lungs normal, with a few moist râles over posterior dependent portions Heart area difficult to ascertain because of overlying lung Apex beat not palpable Heart sounds pure but weak. No endocardial murmur Heart action irregular , intermittent pulse, 96 per minute No accentuation of second sound over pulmonary or aortic valves Radial pulse, soft, moderate in size, compressible and intermittent Moderate edema of both legs A single specimen of urine showed, sp gr 1025 acid reaction, brownish color, small amount of albumin, no sugar, no bile A few hyaline and granular casts were found in the deposit of the centrifuge

He was kept quiet at his home upon a simple diet excluding meats A more extended examination revealed diminution of the urine of twenty-four hours, with a relatively low specific gravity, lessened total solids, and one-half the normal urea Albumin was constantly present with granular and hyaline casts The heart presented the physical findings enumerated The sphygmograph gave a poor and unsatisfactory tracing, because of the difficulty of applying the instrument to a wrist which was in a constant intentional tremor, and also because the heavy muscles and tendons covered the radial artery so fully that the pressure necessary to secure a result gave a tracing of no value Strcyninæ sulphas, infusion digitalis and hydrogogue cathartics were used from the beginning At first there was apparent improvement The incompetent heart beat more regularly and forcibly, and the symptoms referable to a weak heart disappeared or became better The urine increased in amount, but the total solids and the urea remained deficient, the specific gravity low, and the albumin and casts were always present He resumed his work in spite of protests to the contrary during January From the beginning of the return to work he gradually relapsed into the condition which he first presented During February, March and April he became gradually worse, and by the beginning of May he was practically water-logged There was general anasarca, orthopnea, cyanosis, cough, a weak wavering pulse, feeble heart action without perceptible murmurs, accentuation of the aortic second sound, diminished bulk of urine, containing much albumin and many hyaline granular and epithelial casts, with less than one-half the normal amount of urea There was sleeplessness but no headache, no nausea and no disturbance of vision, with normal fundus The general appearance was that of a chronic Bright's disease, with the pallor, puffy face and heavy expression so characteristic of the disease On April 20 he complained of pain in the left side of the neck, and within twenty-four hours the left jugular vein, extending from the angle of the jaw to the clavicle, was felt as a cord-like body, which was tender to the touch This was diagnosed a thrombus, and the diagnosis was verified by an extension of the thrombus into the left axillary and brachial veins This complication was attended with much edema of the left upper extremity, which continued for about two weeks Absorption of the thrombus seemed to occur and the circulation was fully restored within a month During the time enumerated the patient was kept quiet in bed as much of the time as he would submit to The diet was exclusively vegetable, with some milk The medication consisted of strychninæ sulph gr 1/30, every four to six hours Digitalis in infusion or tincture, off and on, Basham's mixture of iron in ℥ss every six hours, and hydrogogue cathartics, elaterin —gr 1/20 to gr 1/10, every six hours, or the salines in doses sufficient to produce free, watery stools several times each day

From the time of the absorption of the thrombus of the left external jugular, axillary and brachial veins the patient commenced to improve, and by June 15 he was entirely free from dropsy, the heart stronger, beat almost regularly, and the patient felt able to go about The urine still contained albumin and many hyaline and granular casts, and a deficient amount of total solids and urea

He was placed upon a diet for nephritis, excluding dark meats, and the iron and strychnia were continued He spent the summer at the sea-shore Upon his return home in September, 1895, his weight was 220 pounds, his color was good, and he felt perfectly well An examination showed a steady heart action, with a good strong and soft pulse of 84 per minute The heart presented no abnormal signs The urine of twenty-four hours was as follows quantity 56 ozs, sp gr 1022, reaction, acid, color, amber, urea 2 per cent or 537 grains in twenty four hours No bile, no sugar, no albumin and no casts

He was cautioned not to eat much meat, and to not fatigue himself by work

He returned to his professional work, which was very exacting He walked, for recreation and exercise, five or more miles per day During 1896 he remained well I saw him several times and examined the urine every month Unusual professional care worried him much during the winter of 1896–7 In March, 1897, he again complained of the dyspnea of exertion, and the heart was not quite regular There was a trace of albumin, but no casts in the urine at this time Rest, with strychnia, gave him relief He was out of Chicago for a vacation during July and August Sept 24, 1898, he again complained of dyspnea upon exertion and of palpitation of the heart Weariness after mental or physical exertion and the old symptom of fear of people returned

Examination showed some edema of feet and legs, a weak, irregular heart, and for the first time a systolic murmur at the mitral area, *not transmitted*, with accentuation of both the aortic and pulmonary second sounds The urine contained a trace of albumin and a few hyaline casts, and a normal percentage of urea

He was again placed at rest and submitted to the bed with better grace than during the preceding attack In spite of physical and mental rest, heart tonics, free stools daily and a simple diet he became gradually worse On December 25 he was suddenly seized with aphasia and slight loss of power in the right leg and arm Within two hours he could talk incoherently but never regained the power of free expression by speech or writing

The dropsy gradually increased and the heart weakness more pronounced The heart murmur remained constant, and there was evidence of dilation of both ventricles of the heart The urine was, as a rule, scant, from 20 to 40 ounces per twenty four hours, with lessened solids including urea, but not much albumin and but few casts In this attack the symptoms pointed chiefly to the heart as the chief offending organ At no time in this attack did the urine present evidence of more than chronic venous congestion of the kidneys He died suddenly on March 14, 1898

The clinical course, the physical signs and urinary findings in this case in the first attack pointed more to nephritis as the primary disease The thrombosis of the left jugular and other veins, the absence of retinal changes, the primary edema of the left, the absence of the nervous phenomena of uremia, and finally the apparent recovery and status of good health for about eighteen months negatived nephritis On the other hand, the last named phenomena, the relapse of the disease, the physical findings of the heart and the condition of the urine in the last attack pointed to an intrinsic disease of the heart, as a cause of the insufficiency of that organ

The difficulty of the recognition of the primary cause of the incompetent heart is the intimate relation which exists between the cardio vascular system and the kidneys In all inflammatory diseases of the kidney there are cardio-vascular changes, which are most marked in the so called granular kidney These fibroid changes of the arteries and hypertrophy of the heart, when most marked are easily recognized by the physical signs and the characteristic urinary findings In these cases, too, there is not, as a rule, a tendency to that form of heart incompetency which leads to dropsy The arteries, palpable and invisible, partake of the fibroid change, and cerebral or other hemorrhage is more likely to occur than dropsy Headaches, nausea, vomiting, cyclical diarrhea, retinal changes, mental excitement or hebetude of mind, coma or epileptoid convulsions are the rule in the later stages of the disease In chronic tubal nephritis, on the other hand, while cardio vascular changes are less marked, dropsy may occur with all the phenomena of an incompetent heart The pallor of the patient, the puffy, waxy face, the retinal changes, the headache, nausea and vomiting, the cyclical diarrhea, the epigastric pain and pressure or sense of weight, the scant urine containing much albumin, with hyaline, granular, epithelial and fatty casts, with microscopic quantities of blood at times, and frequently all the signs of a dilated heart, with endocardial murmurs and a weak, rapid and sometimes intermittent or irregular pulse are not unusual phenomena

The incompetent heart of an arterio sclerosis which involves the coronary arteries alone or of the arteries of the heart and kidneys or of the general arterial system, may present phenomena so nearly like the clinical findings of one or both of the inflammatory condition of the kidneys mentioned that the differentiation becomes difficult There may be the thickened artery, the sustained full pulse, the hypertrophied or dilated heart, the retinal changes, vomiting, diarrhea, nervous phenomena, headache, albuminous urine with deficient urea, and the presence of casts of all varieties.

An incompetent heart from valvular disease, presenting first of all the physical findings, characteristic murmurs, dyspnea of exertion, cyanosis, dropsy, beginning in the lower extremities, enlarged liver, portal congestion with consequent indigestion, tendency to thrombosis or embolism, a concentrated albuminous and often bloody urine with hyaline and granular casts, is easily recognized when classical, but may present symptoms and clinical findings which make differentiation from primary kidney disease very difficult In other words, kidney disease with cardio-vascular changes and an intrinsic heart disease with broken compensation and resulting venous congestion of the kidney, often present common symptoms and signs, which may indicate coincident primary involvement, or a primary disease of the one with resulting disease or disturbance of function of the other Those phenomena common to both I have already enumerated There are special phenomena, however, sometimes present, which although sometimes common to the two are more often the result of a primary heart or kidney lesion alone, and these signs or conditions are of some aid in differential diagnosis

If the urine, even though scant, shows a relatively low specific gravity, with diminished total solids, lessened urea, much albumin and casts of all varieties

If the *arterial fibrosis is marked and the pulse full* and sustained, or without arterial thickening if the pulse is sustained

If the dropsical effusion is poor in albumin

If the dropsical effusion contain urea in considerable amount

If there is a tendency to inflammation of serous surfaces, pericarditis and pleuritis especially

If there is a tendency to persistent morning nausea and vomiting of stringy mucus

If there is tendency to periodic diarrhea

If there is much headache, especially severe frontal and occipital pain

If there is a tendency at one time to unrest and mental excitement or at another to somnolence or to coma

If cerebral hemorrhage occur

If the dyspnea of exertion becomes of the Cheyne-Stokes type If severe epigastric pain occur

If the eye ground shows the changes common in albuminuria, and if the patient present a pale, waxy puffy face and heavy expression; and a general anemia, the diagnosis is in favor of nephritis

If there is a history of antecedent disease in which endocarditis may have occurred

If the heart shows physical signs of valvular disease with characteristic murmurs

If there is an irregular heart action persistent in character

If the pulse is weak and not sustained with or without arterial fibrosis

If the dyspnea of exertion is attended with cyanosis

If there is a normal amount of red cells and hemoglobin or only a moderate degree of anemia

If the dropsical effusion begins in the lower extremities, appearing during the day

If the *dropsical effusion is relatively rich in* albumin

If the dropsical effusion contains relatively little or no urea

If *there is a much enlargement of the liver* and tenderness of the left lobe

If the urine is scant, of high specific gravity, with much lateritious deposit, little or no albumin, a high percentage of urea, although the total urea of twenty-four hours is deficient, a few casts only, chiefly hyaline or finely granular

If there is little or no headache, no eye ground changes, and if venous thrombosis or embolism occur the diagnosis is in favor of intrinsic heart disease

100 State Street

DISCUSSION

Dr Cole of California—I am much interested in the paper read by Dr Billings It is very difficult to decide whether the primary condition is one pertaining to the kidneys or to the heart, this is more especially true in advanced diseases And I am glad to know that there are others that have this difficulty in making a differential diagnosis

I am much pleased with the finest points in the differential diagnosis which Dr Billings has made

Dr West of Galveston, Texas—It appears to me that this is one of the most interesting and practical subjects It is a difficult question to determine whether the primary disease is one of the kidneys or of the heart Diseases of these organs occur so concurrently One point in the differential diagnosis and which asists in determining which is the primary disease, is the therapeutic test. If renal symptoms due to congestion of the kidney, such as albuminuria and other evidences of disturbed renal circulation appear, the patient should be placed upon proper treatment which tend more especially to remove the results of disturbed cardiac action and disturbances of the circulation, this consists in placing the patient in a horizontal position and giving him heart tonics, such as digitalis, strychnin, etc., and stimulate the emunctories, especially the bowels and skin, under that treatment in many instances the differential diagnosis will clear up The urine becomes more abundant, there is a lower specific gravity, the casts disappear and the differential diagnosis can be made with perfect ease In my *experience, if these cases are allowed to progress for a long* time, it is then impossible to make a differential diagnosis

Dr Bond of Indiana—This is an interesting subject Dr Billings brought out clearly all the prominent points In one case the patient had kidney disease and *still further arterio* sclerosis One common factor in both diseases is arterio sclerosis I doubt if it is possible to have either disease without arterio sclerosis, this is a common observation in these cases even before albumin or casts appear in the urine or a heart murmur is observed, showing deficient waste Some years ago, 100 cases of this kind were observed where there was a deficiency of urea found in cases not suspected of having heart or Bright's disease I think the first evidence of this disease which is constant is a deficiency in the nitrogenous waste Instead of twenty five grams of urea excreted in twenty four hours, a man was found to be passing ten or fifteen grams, he was afterward found to be passing casts and there were symptoms of arterio sclerosis, the albumin came on especially after exercise One year afterward the heart was found to be affected

Dr Brown of Illinois—I think it is very important that we should separate the two great forms of Bright's disease, the interstitial from the chronic. There is no disease in which we so often make mistakes in the early diagnosis as in interstitial nephritis For five or ten years there may be no albumin, no dropsy, no casts or anything to account for the polyuria which exists, and it is very difficult to find the cause The diagnosis is made, not upon the symptoms directed to the kidneys themselves, but upon the symptoms that are referred to other organs than the kidneys—upon the subjective symptoms

Dr **BRIDGE** of California—What Dr Bond has said is largely true It is a matter of no great moment in these cases to settle the question whether the lesion is one of the kidneys or of the heart, because sooner or later lesions in both will occur in the same patient. Dr Billings has set forth, as well as could be set forth, the means of making a differentiation An important thing brought out in the paper was that there were two kinds of lesions and the fact that they result from similar causes There is some poison in the blood containing effete matter, which lowers the vitality of the vessels of the kidneys, whereby these various lesions occur In his case he had afterward a thrombus in the veins due to some injury to the lining of the vein, followed by certain changes in the blood, then atheroma which caused changes in the heart, producing dilatation and finally murmurs. What is this change? What metamorphosis is there in the lining of the vessels of the heart and kidney which make it predisposed to take on these changes?

As to the diagnostic value of casts, I feel sure that if the Doctor should use the centrifuge carefully, he would find casts in everybody's urine It is no question of the presence of casts, but their number

Dr **DAVIS** of Chicago—The most difficult problem presented to us is to find which is the primary disease, that of the heart or of the kidney, especially is this true when the kidney and heart trouble appear to come on simultaneously In certain cases the phenomena present enable us to make a diagnosis as to which is the primary lesion On the other hand, as already has been stated, we find cases in which there are evidences of cirrhosis of the kidney with cardiac lesions, due to atheromatous condition of the vessels generally Here symptoms come on which are important in that they show us which lesion predominates, whether the renal or the cardiac These cases require the closest scrutiny and treatment.

Dr **BRIDGE**—There were two points brought out in the paper of Dr Billings, one, heredity, or the family tendency to the disease, second, the occurrence of some persistent disease which could lead to either heart or kidney disease Frequently Bright's disease is a family disease Also, the persistence of any disease which could lead to endocardial or myocardial disease would lead to heart disease as against Bright's disease

The point raised in regard to the thrombus is a good one Whether it occurs in the blood vessel of the body or the brain it indicates a tendency to heart disease The non existence of hypertrophy and valvular lesions in any case would point away from the heart and toward the kidney In Dr Billing's case might it not have been that the earlier disease was a diffuse nephritis in a patient with a weak heart which manifested symptoms of this weak heart? Afterwards the patient regained health, and then suffered from cardiac disease which ended his life I believe that cases of chronic diffuse nephritis recover under appropriate treatment and the evidences of kidney lesion, previously present, will entirely disappear Perhaps it may recur again or produce changes which will produce manifestations later on in the life of the individual

I am glad that I have heard the paper, the differentiation between lesions of the heart and the kidney is of considerable importance as bearing on both prognosis and on treatment.

Dr **WEST** of Galveston, Texas—I wish to speak of another class of cases of interstitial nephritis in which there is a low specific gravity, with an entire absence of renal symptoms or disturbances of circulation There are no symptoms at all except a slight albuminuria By the careful use of the centrifuge no casts are found I examined a man for life insurance, in whom there were no symptoms pointing to kidney disease, there was an albuminuria present. No casts were found after careful examination in several instances One might suppose it to be a case of temporary albuminuria I could not possibly recommend the man in spite of the fact that he gave no symptoms at all

Dr **BABCOCK** of Illinois—I should like to emphasize a single point in the differentiation between primary cardiac and primary renal cases, it relates to pulse tension In these cases of primary renal disease there is an increase in the blood pressure which will have existed for a greater or less length of time, and if the pulse be carefully studied both by the sphygmograph and by careful auscultation of the aortic second sound much valuable information will be derived In the case reported it was distinctly said that the primary examination of the heart showed an accentuation of the aortic and pulmonic second sounds It seems to me that that statement was important At the postmortem it was shown that the heart had been diseased for a long time, although the patient suffered from renal changes, as has been stated, perhaps there was a chronic diffuse nephritis which was recovered from, still the heart was the organ primarily at fault

I have under observation a man aged 65 years who has an enlarged heart, who has renal changes, whose urine shows evidences of chronic interstitial nephritis The arteries are also sclerosed It has been a difficult matter for me to determine which organ was the one demanding treatment The accentuation of the aortic second sound, the pulse tension and the fact that the heart endures exercise, also that the amount of urine responds pretty well, *i e*, the amount of the urine increases but the solids of the urine do not, these findings make me sure that in this man's case the heart is not the organ primarily affected The heart is secondarily enlarged in response to the abnormal pulse tension which has existed for years The treatment in such cases, to be successful, must be directed to the general condition largely, although if the heart is disproportionately weak, then this organ demands close attention and the greatest care

Dr **ANDERS** of Philadelphia—The subject of Dr Billings' interesting paper is a large one and I simply would like to refer to one or two aspects of the same The differential diagnosis, as drawn by the author of the paper, readily permits a differentiation of chronic parenchymatous nephritis and organic disease of the heart. Closely with the relationship between the heart and kidney disease stands another condition, namely, arterio-sclerosis I should like to emphasize the fact that in cases of so called interstitial nephritis in which lesions of the heart are associated they are from one common cause One primary fundamental cause is general arterio sclerosis Now, the troubles with the kidneys are secondary to the arterio sclerosis, the same is true of the cardiac condition In either case compensation ruptures and the left ventricle begins to weaken In the case reported by Dr Billings this occurred, the left ventricle was already weakened and so the phenomena reported appeared secondarily This exists in cases in which primary condition of arterio sclerosis is followed by rupture of compensation Few are seen for the first time until after compensation has ruptured, here the presence of organic murmurs can be differentiated from murmurs due to primary valvular disease

Dr **BILLINGS**—I chose this subject because it was very interesting to me, partly because of the difficulty in the diagnosis of these cases, as already has been stated in the paper It is quite important that a differentiation should be made A man with an incompetent heart due to intrinsic heart disease, in some cases with a water logged condition, may be given a hope of prolongation of life In kidney disease do not forget that when the disease of the kidney pro gresses to such a stage that the heart becomes incompetent and the cardio-vascular changes are sufficient to produce this water logged condition, the patient can not long exist It is true that therapeutic tests may be of value, but the therapeutic test is like the dead house test. A man with kidney disease with changes in the heart and blood vessels, who is in a water logged condition, does not have perfectly normal urine, as can be proven If a nephritis occurs and continues long enough to have cardiac changes, incompetent heart, bronchitis, general anasarca, etc., he may have hemorrhages in the brain and elsewhere There has been a condition mentioned in which arterio sclerosis, hypertrophy of the heart and sclerosis of the blood vessels, and other evidences of Bright's disease occurred and yet no Bright's disease I have tried to write my findings of the case, and also stated in my conclusions that in kidney disease the arterial sclerosis was marked and the pulse full and sustained I am gratified that the paper has received the amount of discussion it has

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DIABETIC GANGRENE

Presented to the Section on the Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association held at Denver Colo., June 7-10 1898

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The following cases of gangrene associated with diabetes which have been observed by me during the last few years, inspired me to look through the rather meager literature of the subject with care

J G , 62 years old, was a ruddy and hearty Englishman who was habitually careless and negligent of himself and his health. In July, 1892, I found that he was a diabetic As he promptly improved, gaining in strength and flesh, he did not persevere with the prescribed treatment. He was not seen a second time until September The last joint of the middle finger of his left hand was then purplish red, swollen and painful The skin on the ball of the finger was hard, slightly wrinkled and almost black Pain was constant but not intense The rest of the finger looked normal except at the first joint a red line of demarcation was discernable This finger had not been scratched or injured The gangrene was evidently spontaneous His urine contained 1.3 per cent of sugar and had a sp gr of 1032. A week later he voided 2 quarts of urine, a quart less than before It contained only a trace of sugar Sensibility was entirely wanting in the last phalanx of the affected finger except at the sharply defined line of demarcation The last phalanx was blue black and perfectly mummified Pain gradually disappeared By the 24th of September the quantity of urine voided was normal, having a specific gravity of 1028 and containing no sugar Sugar did not reappear until the end of October, when it occurred in 1 3 per cent. The urine had a specific gravity of 1031 For several days prior to this examination he used farinaceous food freely When he again adhered to a moderately rigid diabetic diet sugar disappeared from his urine The last phalanx gradually underwent spontaneous amputation and separated completely from the healthy tissue the first of November The stump healed nicely I saw him *occasionally during the next three months He* gained in flesh strength and vigor There was no return of glycosuria, although in January he suffered from a mild eczema of prepuce and scrotum This man had tortuous temporal arteries and nodulation of the left radial A sphygmographic tracing showed the low round topped waves produced by atheromatous arteries When his finger was first found to be gangrenous amputation was advised, but he refused to submit to it, and when he learned later that spontaneous amputation might take place, was still more unwilling to have the knife used

B J B , 62 years old, a lawyer of prominence in one of the smaller cities of Michigan, consulted me in November, 1894 He first learned that he had glycosuria in 1892, when he was examined for life insurance He was a large eater, moderate drinker, and eminently sedentary in habits Ten years before he weighed 200 pounds, when he was first seen by me he weighed 177 For two years he had not varied more than two or three pounds from this weight. He felt in x cept that for some months there had been an spot on the ball of his right great toe An offensive slough of small dimensions had separated from it When I saw it healing had begun There was a shallow ulcer in the center of a yellowish callous Almost no pus came from it It caused no pain and was only tender when the raw flesh was touched The toe appeared healthy A sample of his urine had a specific gravity of 1040 and contained 2.5 per cent. of sugar His arteries were hard but not nodulated His heart was not hypertrophic

I did not see this patient again until September, 1895 The ulcer under his toe never healed entirely Several times it seemed almost well but became worse again Alongside of the callus on which the ulcer was located was a superficial blister filled with bloody serum He had recently had a similar blister on the sole of the foot. Both had come without recognizable cause His urine contained a trifle less sugar His general health was good , he weighed 180 pounds

The next visit I received from him was in June, 1896 The ulcer remained unhealed It was sometimes scabbed over and at others was covered by a small amount of pus Its diameter varied from one third to one half of an inch A sample of his urine contained 3 per cent of sugar In October of the same year, this patient was seen again He thought his toe was well until about the first of September, when he was much worried by business cares and lost flesh, the ulcer opened again, and in a symmetrical place upon the left big toe a large blister formed When the latter was opened and the dead overlying skin removed, a considerable excavation with raised edges and suppurating surface was disclosed I did not see him again for a year, until last October Both ulcers were about the same The whole of the left big toe was purplish and slightly swollen It was moderately tender and painful In other ways he felt well A sample of his urine had a specific gravity of 1033 and contained 2 per cent of sugar

This patient was seen by me at such long intervals that he can not be said to have had systematic treatment. Moreover, he was not abstemious as regards food, drink or tobacco He kept the affected toes as clean as possible, and applied successively a great variety of antiseptic salves and powders He had persistent glycosuria, but of very moderate grade of severity He rarely made more urine than was normal, and the diabetic state caused no appreciable loss of flesh or ability for mental work This case is interesting because of the character and chronicity of the ulcers, and finally, because of the symmetrical distribution of the ulcers upon both feet When last seen by me, I feared the whole of the left great toe was about to become gangrenous

Katherine E , 58 years old, born in Ireland, was first seen by me in July, 1895 For five months her right foot pained her I found the toes and, to a less extent, the distal third of her foot reddened and painful The pain ceased almost completely whenever she remained on the bed or lounge There had been slight suppuration about one toe nail, and a superficial ulcer on one toe joint Both these lesions had disappeared before I examined her foot. She had lost flesh during several months She had never been stout, but was decidedly thin when she came to me Her appetite was poor She experienced no thirst Her bowels were constipated As far as she had observed her urine was normal A week later the foot was less swollen and painful, but the toe next to the little one was numb, purplish red and looked as if about to become gangrenous A sample of her urine had a specific gravity of 1028, and contained 1 5 per cent. of sugar Before the end of August the last two phalanges of this toe were mummified A line of demarcation developed at the second joint On the toe next to the big one a moist slough formed over a space a quarter of an inch in diameter She was making from three to four pints of urine daily The glycosuria rapidly diminished and by the first of *September ceased Her foot remained* about the same, causing varying degrees of pain Slowly the mummified toe separated from the healthy tissue The middle of December it was attached only by a few shreds of tissue, which separated with a little traction The ulcer on the other toe was slowly improving The stump of the amputated toe soon healed perfectly A trace of sugar was discoverable in her urine at this time In January the ulcer on the second toe grew worse, although there was no glycosuria. By the first of February it had opened into the joint. Toward the end of the month I picked from the opening a small piece of dead bone After this the wound slo heal In March, the following month, a gangrenous sl the ball of the great toe of the same foot n the instep to the toes was a dull purplish slightly swollen The capillary circulat in the skin of was not cc Her urine was co foot. In October her left foot (not the one first affected) became painful. The second toe was purplish red. From one edge of the nail it bled slightly. A red streak stretched up to the instep from the base of this toe. Her urine contained about 1 per cent. of sugar. The foot became diffusely red and more painful, the second toe lost sensibility, one edge sloughed away, the remainder slowly mummified. A month later this toe began to separate from the sound flesh and the one next to it also became gangrenous and dried up. The foot improved and was only occasionally painful. She kept her leg in a horizontal position almost continuously. Two months later both toes came away, having undergone spontaneous amputation, one at the first joint the other at the second. This woman also refused amputation by the knife.

In this case the disappearance of sugar from the urine, while the mummified toes were separating from the healthy tissue and its reappearance just before and when gangrene began afresh, was noticeable. The superficial arteries of this patient were tortuous and hard but not noticeably atheromatous. Nor were there changes in the heart which would suggest the possibility of extensive atheroma. Undoubtedly, however, atheroma existed in all three of these cases and was the prime cause of gangrene.

The first and third cases typify well the milder forms of spontaneous gangrene in diabetics. The successive invasion of different toes in the last case is noteworthy. The diminution and even disappearance of glycosuria in both cases, while mummification existed and spontaneous amputation of the phalanges was progressing is interesting. A similar marked diminution or disappearance of glycosuria I have observed in several cases when tubercular disease of the lungs was active. Both cases were upon diabetic treatment, which consisted mainly in a regulation of diet, the use of arsenical preparations and at times opiates.

The second case at first was one of *mal perforant*, which is an occasional complication of diabetes. Kirmission (*Arch. gén. de Méd.*, 1885) has reported seven cases of it associated with diabetes, Duvernoy (*Arch. gén. de Méd.*, Paris, 1891, 603), four, Gascuel (Thesis, Paris, 1886), fourteen, and Williamson, four ("Diabetes Mellitus," R. T. Williamson, published by Y. J. Pentland, London, 1898). Gascuel found in ninety-one cases of *mal perforant* that it was associated fourteen times with diabetes. The association is evidently no more an accidental one than the association of diabetes and gangrene proper. That there is a more frequent association of gangrene and diabetes than chance would cause, was first pointed out by Marchel in 1852. Diabetic gangrene occurs much oftener in the legs and feet than elsewhere. Marchel makes note of thirty-five cases with the lesion below the knees, seven in the lungs and three in the hands, out of a total of 133. In the remaining cases the lesions were very widely scattered. Hunt records three out of five cases of gangrene of the feet. In the cases which I find reported still more recently there is about the same proportional distribution of the lesion.

Sturgis (*Bos. Med. and Surg. Jour.*, 1891, 261, cxxiv) has described an interesting case of gangrene of the lip in a diabetic of 64. Sloughing occurred, but the wound finally healed. For three years the secretion of saliva had almost ceased in this patient's mouth, a condition which caused him great distress. During the period of inflammatory reaction after gangrene had occurred on his lip, saliva formed once more in his mouth. In this case Sturgis calls attention to the great diminution of sugar in the urine after sloughing had occurred. Those cases of gangrene occurring in the course of diabetes which are associated with or superimposed upon inflammation, are undoubtedly chiefly due to the low vitality of tissues in diabetics, and the consequent ease with which putrefaction takes place in them. The frequency of gangrene of the lungs in diabetics, who also have tubercular or other disease of the lungs, can be accounted for in this way. The cause of spontaneous gangrene, which is not preceded by visible wounds or infection, is of more interest. *Neuritis and atheroma* have both been assigned as causes of the spontaneous gangrene of diabetes. Both lesions frequently accompany diabetes. Godlee (Med. Chi. and Trans., lxxvi, 37) admits two varieties of spontaneous diabetic gangrene, the one due to neuritis, the other to atheroma. He recommends amputation at the knee, or above, in *all of the latter* variety, and operation close to the point of necrosis in the former. Davies Pryce (*Brain*, 1893, 63) points to the almost constant coincidence of neuritis and atheroma in diabetes. Heidenhain's review of this subject is the most thorough of any in recent years (*Deut. Med. Woch.*, 1891, xvii, 1097, 1111, 1123, 1144, 1163). He believes that diabetic gangrene is in most, if not in all, cases due to arterio-sclerosis. His statistics are quite convincing. According to him, spontaneous gangrene in diabetics is pathologically identical with senile gangrene. Heidenhain also calls attention to the very frequent occurrance, even in early adult life, of arterio-sclerosis in diabetics. The cases which I have found reported are all in that period of life when this arterial lesion is to be expected. The only cases in earlier years of life are one, a girl of 19, in whom gangrene developed after an operation for cataract, and one of gangrene of the lungs in a child 8 months old (E. Wegli, *Arch. für Kinderheilkunde*, B. xix). In many of the cases of diabetic gangrene on record no mention is made of the condition of the arteries. In all in which mention is made of the the state of the arteries, arterio-sclerosis existed, with one exception, which was a case described by Rosenblath (*Arch. für Path. Anat.*, Berlin, 1888, cxiv, 202-210). Very numerous areas of circumscribed necrosis occurred upon the skin and mucous membranes of this patient. No vascular lesions were discernible at autopsy. Hebb (Westminster Hosp. Rep., lx, 1895, 113) describes another noteworthy case, which shows that every time gangrene occurs in diabetics, it is not due to either neuritis or arterio-sclerosis in the affected limb. Gangrene of the right arm developed with the symptoms usually caused by embolism. At the autopsy it was found to be due to an embolus consisting of a vegetation which had broken from an atheromatous ulcer in the arch of the aorta. Arteritis was general, but beginning, not advanced.

Williamson thinks that perforating ulcer of the foot in diabetes is due to neuritis. He bases his belief on clinical, not postmortem evidences. Mild neuritis is extremely common in diabetes and occasionally a severe form of lesion is demonstrable. In case two, just described above, frequently indescribable, uneasy and uncomfortable, but not painful sensations are felt in the legs. He had no knee jerk. There may be evidences of mild neuritis. Most frequently neuritis and arterio-sclerosis occur together.

Hunt says that areas of gangrene in diabetics are mapped out by a less defined line of demarkation than in cases of senile gangrene. The literature of the subject does not corroborate this statement, nor do my own observations.

Surgeons have been disinclined to operate upon diabetics because of their susceptibility to infection Recent experience has shown, however, that amputations can be performed upon them with good success, provided only sufficient care is taken to prevent infection Heidenhain (*Deut Med Wochen*, 1891, xvii) recommends that if gangrene is confined to the toes the physician wait until a line of demarkation develops, and if there is no evidence of general infection, that the dead tissue be allowed to separate spontaneously If, however, the sole or dorsum of the foot is involved, the leg should be amputated at the knee or above it This is a rule which my reading convinces me is correct I, however, think that amputation of the toe, after a line of demarkation has become well established, is preferable to the tedium and pain of spontaneous amputation The greatest pains should be taken to gently remove the sloughing tissues, and by the free use of antiseptics to limit putrefaction

It goes without saying that the diabetes should receive as much attention as the gangrene Treatment appropriate to it should be carefully carried out

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THE DIFFERENTIAL DIAGNOSIS BETWEEN DENGUE AND YELLOW FEVER WITH SOME ACCOUNT OF THE EPIDEMIC OF 1897 IN TEXAS

Presented to the Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association, held at Denver, Colo June 7-10 1898

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The diagnosis of disease is universally and justly regarded as the foundation stone upon which rests the entire superstructure of practical medicine The question concerns the health, life or death of the individual affected, his family and friends, the public in so far as he may be a useful and influential member of society, and the physician as affording a basis for his prognosis and treatment But there are occasions when far more momentous interests are involved in the correct diagnosis of prevailing diseases a complete paralysis of commerce, the wheels of industry arrested, enforced idleness with consequent poverty and suffering of thousands, enormous depreciation in property values of every kind, universal fear and panic, and the possibility of wide spread death and desolation To the physician himself an error in diagnosis ordinarily involves results which are comparatively inconsequential, on the other hand, there are times when such an error means public denunciation and disapprobation A correct diagnosis, even when opposed to commercial interests, may involve him in losses of reputation and business which may last for a lifetime

This was the state of affairs in Texas during the summer and autumn of 1897 So long as yellow fever was supposed to prevail east of the Mississippi only, and that dengue was the epidemic disease in Texas, peace reigned, but when the trouble came to our own doors by the announcement of yellow fever in Galveston and Houston, there came the contest over the question of diagnosis, with visits of local experts from city to city, the gradual passing of the epidemic with no record of deaths from yellow fever, and the popular conviction of a stupendous error committed by those who believed in the presence of that disease The majority, both of physicians and laymen in the State are firm in the conviction that dengue was the disease which was prevalent in Texas during the past summer, a minority believe that yellow fever also prevailed, but that owing to its mild form, indisposition to spread, exceptionally small mortality and resemblance to dengue was usually unrecognized Confusion has arisen in the minds of many They ask themselves, "Are the land-marks all swept away? Have the authorities led us astray? Has a new disease, *anomalous dengue*, made its appearance? Is there no such thing as dengue? Is the so called dengue a mild form of yellow fever? Does the latter arise de novo?"

The important issues dependent upon a knowledge and recognition of the truth upon these points render it not only pertinent but imperative upon the part of those who are familiar with the facts to study them in concert Now that the obscuring mists due to commercialism, prejudice and passion, have for the most part passed away, we approach the subject from a scientific standpoint It is with this end in view and in no spirit of dogmatism or self assertion that I introduce the subject for consideration

The following hypotheses have been assumed in relation to the recent epidemic

1 The disease was dengue only There was no yellow fever in Galveston, Houston, or the State of Texas in 1897

2 There were anomalous cases of dengue, presenting all the symptoms of yellow fever, but proven not to be that disease, by the indisposition to spread from numerous foci and the low mortality rate

3 During the progress of an intense epidemic of dengue throughout the State, in Galveston, Houston, and possibly other places, yellow fever made its appearance, and in consequence of its mild form and resemblance to the prevalent disease was generally unrecognized

4 An imputed hypothesis that the epidemic of 1897 in Texas was yellow fever only

5 A few cases terminating fatally, and others attended by marked jaundice and albuminuria were denominated acute infectious jaundice (Weil's disease)

In order to obtain definite information upon the subject, the following circular of inquiry was distributed to a limited extent I regret very much that replies could not have been obtained from every infected place in the State, so as to have made the report an exhaustive one The subjoined tabular statement, will, I trust, afford sufficient data upon which to base some definite conclusions Following is the circular of inquiry

"It is my intention to prepare a paper upon the 'Differential Diagnosis between Dengue and Yellow Fever, with some Account of the Epidemic in Texas in 1897,' to be read at the forthcoming meeting of the State Medical Association at Houston, and at the Denver meeting of the AMERICAN MEDICAL ASSOCIATION If dengue prevailed in your community during the last season you would oblige me very much by furnishing me with information upon the following points

"1 Date of outbreak, rapidity of spread, probable proportion of population affected, duration of epidemic, any evidence as to its origin

"2 Any unusual meteorologic influences, as excessive heat or precipitation, local hygienic conditions

"3 Symptomatology *a* The eruption The character of, and present in what proportion of cases *b* Glandular enlargements What glands usually involved, and in what proportion of cases *c* Hemorrhages In what proportion of cases and from what sources *d* Nausea and vomiting Severity and comparative frequency of, dysenteric symptoms noted *e* Albuminuria In how many instances examined for, proportion of cases found, large or small amount, any other characteristics of urine noted, daily quantity, color, casts, blood, epithelial cells, any uræmic symptoms or other evidence of acute nephritis

"4 Ratio of pulse to temperature

"5 Jaundice, if noted, character of, and occurring in how many cases

"6 Mortality, postmortem findings, if any

"7 Did you have any reason to suspect the presence of yellow fever? If so, upon what evidence?

"8 Any difference in the severity as the epidemic progressed?

"As I am sending out but a limited number of these circulars, and the subject is of extreme interest and importance, a prompt and complete reply is requested"

Subjoined is a tabular statement of replies

Data obtained from other localities are as follows Gainesville, Cook County, on the extreme north central border, reporter Dr J E Gilcreest, no epidemic, only a few sporadic cases of mild type, symptoms not noted Terrell, Kaufman County, near N E border, Dr W H Monday reports no cases. Dr J T Wilson, Sherman, Grayson County, north central border, no dengue Dr J M Neil, Bonham, Fannin County, in same district as above, no epidemic, saw but one case, which was contracted at Paris Dr T J Bell reports from Tyler, Smith County, East Central Texas, very mild epidemic, commencing 15th of October, spreading slowly and affecting a small number, no evidence as to origin, no rash in most cases, no hemorrhages, glandular involvement, dysenteric symptoms or jaundice noted, no deaths

Dr J H Barham, Nacogdoches, east central, no epidemic, saw three cases only, one contracted dengue in Houston, two here, all in different families, no spread, eruptions in two, absent in one, nausea and vomiting in all no tests for albumin, jaundice in all, well marked in one, moderate in one, slight in the other suspected yellow fever in case from Houston, all recovered

Summarizing results obtained from the foregoing twenty observers in eighteen places, we find as follows

The epidemic of dengue of 1897 prevailed chiefly in southern central Texas within a radius of 200 miles from Houston, but extending and prevalent to a limited extent 300 miles to the extreme northern border. San Antonio, Houston and Galveston, followed by Schulenberg and Navasota, appear to have been most intensely infected, the proportion of population in these places affected varying from 75 to 90 per cent Belton, Palestine and Huntsville followed closely with a percentage of 60–65 In the extreme northern and eastern portions of the State, as in Gainesville, Sherman, Bonham, Terrell and Tyler, there were but a few sporadic cases At Dallas and Paris a very mild epidemic, affecting not more than 5 per cent of the population San Antonio, Galveston and Houston seem to have been the centers of infection, as appears from the following statement Palestine, a railroad center about 150 miles north of Houston and 200 miles northeast of San Antonio, with double daily train service Dr Link states the probable origin was from these two cities

Dr Tabor reports from Bryan, which is about 100 miles from Houston with direct rail connection, that both the first and second cases were persons who had been exposed in Houston

Dr Thomason reports from Huntsville, about seventy miles north of Houston, with direct train service with the latter place and Galveston, that the first case was a young lady from Galveston, and that other foci of infection were soon developed by parties from Houston and Galveston Austin's first case was a hotel clerk recently returned from San Antonio

Dr Lee reports from Galveston that his first case, seen July 29, was from San Antonio

The first two cases seen by the writer, August 11, were in the persons of young men who had returned to Galveston from the Interstate Drill at San Antonio Schulenberg is about equidistant from Houston and San Antonio, and may have been infected from either Navasota is only about seventy miles from Houston The intensity of the disease at San Antonio, the presence there of militia companies, not only from numerous points in the State, but of States east of the Mississippi, the coincidence in time (latter part of July) of the return of the militia to their homes with the outbreak of the disease, and the positive identification of the first cases in several places in persons who had returned from the encampment, is evidence going to prove that San Antonio was the initial point of infection in the State As to the origin of the disease in the latter city I have no means of tracing it, but can only say that ample opportunity for conveyance of dengue was afforded by the collection there from July 19 to 26 of troops and visitors from points east of the Mississippi where the disease had made its appearance

Further confirmation is also afforded by the facts above cited that dengue is an infectious, a portable and contagious disease, *i e*, the specific micro organism which produces it may escape from the body of an infected individual and be transmitted by persons and things to other persons, thus speedily multiplying foci of infection and accounting for the rapidity of its dissemination The fact previously observed that the progress of the disease is arrested by the advent of cold weather or frost, has also been confirmed by the consensus of statements herein presented As to the effects of meteorologic and hygienic conditions, the majority of observers describe the weather as excessively hot and dry The mean daily temperature in Galveston was nearly 8 degrees hotter during the month of October, 1897, than in the previous three years, and the continuance of unusual hot weather in November and December was the subject of general comment Local sanitary conditions do not appear to have played any important part in the propagation of the disease Dr Paschal, however, calls attention to the excessively insanitary condition of San Antonio at the time of the outbreak, and Dr Tabor ascribes the comparative immunity in Bryan (only 100 cases out of a population of 4000) to the extraordinary precaution to better the sanitary condition of the town In regard to the symptomatology, I have not attempted to obtain information as to the complete clinical history of the cases under consideration, but rather to determine the distinctive value of those symptoms which have heretofore been regarded as of great importance in the differentiation between dengue and yellow fever, viz, the presence of an eruption, hemorrhages, nausea and vomiting, evidence of an acute nephritis, as albuminuria, scantiness, presence of casts, uremia, divergent pulse and temperature, jaundice and mortality

There is almost perfect unanimity upon the part of observers as to the presence of an eruption, the proportion with this symptom varying from 25 to 90 per cent, 75 per cent would be a fair average It is variously described as miliary, scarlatiniform, rubeoloid, erythematous, reddish papules, macular dermatitis, urticarial, desquamative, as localized upon the face and neck, upon the face and upper part of the body, with profuse perspiration, irregular as to time of appearance, coming on the second or fourth day, or end of the fever, hyperemia appearing on the first day Dr Peeples notes the fact that, while frequently absent in adults, an eruption was almost invariably present in children

The consensus of opinion is that glandular involvement occurred to a very limited extent in this epidemic, the majority of observers not noting this symptom at all, but one observer mentioning enlargement of the cervical glands and tonsils in 25 per cent of the cases, another the connection between enlargement of these glands and the rash, another observed swelling of parotids, sublingual, inguinal and suboccipital, especially in children, one observer noted enlargement of the submaxillary glands in 20 per cent of his cases

Hemorrhages—With but three exceptions every observer noted the occurrence of hemorrhages The nose, throat, gums, stomach, intestines, uterus and kidneys were the chief sources mentioned The percentage in which this symptom was present varied from 1 to 10 per cent Three or four observed black vomit

Nausea and vomiting were notable symptoms and occurred in a large proportion of cases, varying from 80 to 90 per cent, with but few exceptions it was described as severe, excessive, incessant, almost universal, etc

Condition of the urine—Unfortunately, observations pertaining to the urine were made so infrequently and imperfectly as to render them of but little value Most of the observers made no examination at all, a few examined for albumin only in the worst cases Dr Wilkinson of Galveston, out of 500 cases, says he tested for albumin in many and found it absent, sp grav was generally high Dr Lee, Galveston, states he examined for albumin in 50 cases out of 490 Eight of these had previous kidney trouble, of the remaining 42, 20 showed slight albuminuria on the third and fourth days, and in 6 albumin was present in large amounts Dr J M Coble, Dallas, examined the urine in 25 per cent of his cases and found slight albuminuria in 10 per cent of them

Drs Wilson and Harris of Navasota only made urinary examinations toward end of the epidemic, in about fifty cases, in forty of these albumin was found in good quantity The urine was diminished in quality and high colored, casts and blood cells found in three cases and uremic symptoms in four Dr Taylor Hudson, Belton, tested the urine only in a few suspicious cases and found albumin in several, the urine was usually dark and diminished, uremic symptoms pronounced in several Dr D L Peeples, Navasota, found albumin from slight trace to abundance, in some cases with almost total suppression, color varying from a deep straw to color of blood Dr R R Walker, Paris, found albumin in 25 per cent of his cases Dr W W Walker, Schulenberg, only tested for albumin in worst cases, found it in ten, in some in large amounts The remainder of reporters failed to note condition of the urine

If, however, dengue was the only disease prevalent, albuminuria is not the rare symptom in that disease as heretofore has been the opinion

Ratio of pulse to temperature—Ten out of sixteen observers mention that the pulse was abnormally slow in proportion to the pyrexia, three state the ratio normal and three made no note of the symptom

Jaundice—Four reporters mention this symptom as present in about 7 per cent, one, Dr Wilkinson, Galveston, mentions jaundice as being of frequent occurrence and of severe grade after October 1 One notes it as generally present of mild grade, another states it was mild in 10 per cent and severe in 2 to 5 per cent, one found it more or less present and seven failed to note icterus at all

Mortality—There is almost perfect unanimity as to want of mortality in the recent epidemic, the few deaths occurring were usually ascribed to some complication As regards progressive severity a majority state there was no marked difference, a few assert aggravation in the beginning and in the midst of the epidemic Dr Wilkinson notes mildness in August, increased severity in September, progressing to violence in October Only two or three out of the twenty suspected the presence of yellow fever As to the early symptoms The onset was usually sudden, attended by slight rigors or chilly sensations with more or less severe headache and pains in the back, limbs and joints As regards the paroxysm there is a remarkable discrepancy in the statements of Drs Lee and Wilkinson, each of whom treated about five hundred cases Dr W (I quote his exact language) states "The fever in all my observations contained but one single paroxysm, there was no secondary fever from first to last, it departed by lysis, after three or four days duration and never returned, except in cases of relapse several weeks later" Dr Lee, on the contrary, says "In a large proportion of the above mentioned cases two paroxysms were noticeable, the first coming on usually without positive chill or chilliness, temperature usually high in the beginning became, after slight remission, high again toward the end of the attack"

It is difficult to reconcile such contradictions The probabilities are that there is no riable regard to the pa ten t hospital, where careful thermometric observations were made, there was one paroxysm only in seven, in one there was an exacerbation in the afternoon of the day following that, when the temperature reached normal, in one the fever was of remittent type, rising at midday for three successive days, in one there was a slight return of fever on the evening of the first day after the temperature reached normal

Before proceeding to make any deductions from the foregoing, it will be instructive to present a brief review as to the statements of authorities upon the differential diagnosis of the two diseases under consideration An authority upon this subject I understand to be one who has had the opportunity of studying them at the bedside I shall not attempt any complete bibliography, but the following I think will show what has been the accepted teaching

H D Schmidt on dengue, Pepper's System of Med Ed 1885, page 884 885, says the temperature steadily rises in yellow fever, it is remittent in dengue, pulse in yellow fever falls on third day, while the temperature continues to rise, in dengue on the contrary the pulse rises with the temperature In the condition of the stomach also dengue considerably differs from yellow fever, for while in the latter disease this organ is almost always irritable, and vomiting frequently present, it is but rarely affected in dengue The urine in yellow fever very frequently contains albumin as soon as the third day, in dengue almost never Finally the absence of jaundice and the appearance of the eruption on the fourth or fifth day removes all doubt about the nature of the disease

Sternberg on yellow fever, American System of Med, Vol 1, page 290 "If a diagnosis has not been made before, the symptoms which characterize the second period of the disease should serve to differentiate it from all forms of malarial fevers The cool and usually moist skin, the abnormally slow soft pulse, the gastric distress, and pain on pressure in the epigastrium, the yellow tinge of the conjunctiva, and the albuminous urine in a patient whose temperature is normal or subnormal, following a febrile paroxysm as represented in charts, certainly furnish a clinical picture which should be recognized" Speaking of dengue, page 291-92, he says "It also is characterized by a febrile stage of comparatively short duration, but the characteristic symptoms of yellow fever are absent Albuminous urine stage of depression, hemorrhages, etc"

Matas, Keating's Cyclopedia, Vol 1, page 894, quotes Holliday who makes a comparison of the symptoms of the two diseases after a careful analytical study of the opinions of over sixty physicians who had a long experience of both diseases in New Orleans and other parts of Louisiana as follows

YELLOW FEVER	DENGUE.
Temperature rising regularly	Temperature rising irregularly
Tongue white center, red edges pointed	Tongue broad white indented edges, rarely red
Stomach irritable, vomiting frequent	Vomiting rare
Conjunctiva congested, jaundice appearing early	Conjunctiva rarely red, jaundice never observed
Secretions all suffering, urine scanty, often albuminous, suppression frequent.	Secretions natural, urine *usually* normal, sometimes exceptionally traces of albumin
Hemorrhages frequent and alarming, black vomit an urgent symptom	Hemorrhages slight, black vomit very rare

In regard to the condition of the urine in dengue, Matas observes (see foot note, page 889, Keating) "that in tropical pyrexiæ it is always a matter of great importance, both from the diagnostic and prognostic standpoint" The earliest observers of dengue satisfy themselves with noting simply the color, quantity and reaction, and these are usually most diversely described. Other observers are, however, much more satisfactory. Thus Morgan noticed a specific gravity 1004 to 1040, acid, *non albuminous*, Chipperfield, acid, sp grav av 1010, *non-albuminous* Goodeve detected an occasional trace of albumin in four cases in the Indian epidemic of 1853, while Charles and Martialis *never detected* it in the epidemic of 1872 In China at Amoy, Muller and Manson *failed to find albumin* Albuminuria was detected *only once* in the epidemic of Martinique in 1860, and twice in Cochin China by French observers in 1875 (Mahe) Albuminuria was observed exceptionally by Holliday and his co laborers (loc. cit) in Louisiana Enough has been said to prove that albuminous urine is an exceptional occurrence in dengue, which differentiates it markedly in this respect from yellow fever"

Eugene Foster, Ref Handbook Med Sciences, Vol 2, page 397, gives the following summary of the points of similarity and dissimilarity in dengue and yellow fever

"In time of appearance, and generally in geographical distribution they seem related to one another Dengue has, however, prevailed in Asia and Egypt, where yellow fever is unknown Both diseases are arrested by severe frosts Both dengue and yellow fever are diseases characterized by one febrile paroxysm" In order to show contrast, the symptoms will be arranged in parallel columns

YELLOW FEVER	DENGUE.
The fever rises steadily	The fever rises regularly until the acme is reached, when a short stadium of a few hours occurs, followed by a remission, when a second rise of temperature takes place, but not reaching the former height
The pulse becomes slower, while the temperature rises	The pulse increases in frequency with the rise of temperature
Fever lasts seventy two hours	Fever lasts five to eight days
Vomiting frequent	Vomiting rare
Eruption rare	Eruption common
Jaundice almost invariably present.	Jaundice extremely rare
Urine scanty, frequently albuminous and often suppressed	Urine generally high colored, normal in quantity, free from albumin and never suppressed
Hemorrhages frequent, alarming and often fatal	Tendency to hemorrhages from nose, gums, bowels, lungs and womb, with occasional black vomit, but hemorrhages, as a rule, insignificant.
Often fatal	Proverbially non fatal
One attack protects from another	One attack not protective against another
Not protective against dengue	Not protective against yellow fever

Quoting Sternberg again from his article in Buck's Reference Handbook, Vol VIII, page 60, speaking of the diagnosis of yellow fever, says "Of the three prominent features making up the clinical tableau of yellow fever, viz, a yellow skin, highly albuminous urine and black vomit, only one is a constant character which can serve in establishing the diagnosis in mild cases, this is the presence of albumin in the urine At some period in the disease, even in the mildest cases there will be a distinct trace of albumin in the urine as shown by the usual tests, and this will be usually sufficiently abundant to leave no doubt in the mind of the observer as to the nature of the precipitate The value of this test in the differential diagnosis is indisputable It is true that a trace of albumin is sometimes found in the urine of severe cases of fevers of malarial origin, but in cases of yellow fever of equal severity as compared with these, the precipitate would, as a rule, be very abundant on the third or fourth day of sickness, forming a deposit to the extent of one-fourth to one-half of the contents of the test tube, or even more At the same time a microscopic examination would show the presence in the urine of numerous granular casts from the tubuli uriniferi These are found also, although in a smaller number, in the urine of the milder cases during the second stage of the disease "

'The second stage of the disease is commonly, however, well marked in non-fatal cases, and is its most characteristic feature, the remarkably slow and soft pulse, the evident prostration of the vital powers, although the patient may be comfortable, and even cheerful and desirous of getting up and taking food, the yellow tinge of conjunctivæ and skin (not always present), the tenderness on pressure in the epigastric region, and often a feeling of weight and distress, attended with intense thirst and vomiting of a transparent acid fluid, or of the characteristic black vomit, the tendency to passive hemorrhages from the mucous surface of the mouth or nose, oozing of dark blood from the gums or lips, or sides of the red and fissured tongue, the scanty urinary secretion, and the presence of albumin, usually in considerable amount, constitutes an unmistakable ensemble of symptoms "

It appears from the above quotations that the symptoms which have heretofore been relied upon to differentiate between yellow fever and dengue are the occurrence in the former of albuminuria, the characteristic facies (inclusive of jaundice), the divergent pulse and temperature, excessive irritability of the stomach, and increased disposition to hemorrhages The absence of such symptoms in the main, the presence of an eruption in a large proportion of cases, and a want of mortality are characteristic of dengue In the epidemic herein described we have an apparently inextricable confusion A wide spread epidemic of fever presenting the symptomatology of yellow fever in many instances, but with the eruption of dengue and practically with no mortality One of two deductions is irresistible, either the two diseases approximate more intimately in their symptomatology than has heretofore been taught or yellow fever of remarkably mild type has been associated to a greater or less degree with dengue, granting the reliability of the testimony herein presented both conclusions are warrantable I shall not attempt here to solve this problem so far as the epidemic of the interior is concerned, but will present the evidence which is convincing to my mind that the latter proposition is true as to the coast cities of Galveston and Houston Before doing so however, let me refer briefly to certain facts in regard to the epidemic east of the Mississippi taken chiefly from the report of the Louisiana State Board of Health, dated Dec 6, 1897 The first death from yellow fever was reported by Dr J M Holloway of Louisville, Ky, about August 18, the patient having gone to that city from New Orleans via Ocean Springs where the disease was supposed to have been contracted Subsequently to which, four official investigations were made as to the nature of the epidemic at Ocean Springs resulting as follows

1 The visit of Dr S R Oliphant, president of the Louisiana Board of Health August 22, 1897, who reports finding an epidemic had been prevailing the previous six weeks, that 400 cases had occurred in the practice of two physicians, without a single resultant death, and that it was considered to be dengue of mild type

2 On August 23 a commission of experts from the New Orleans Board, from the Mississippi State Board and others sign a report which concludes as follows "After a careful inspection and examination of the aforesaid cases, we are positive in our opinion that the disease is dengue, and that in no case is there or has there been any symptoms which would lead to even a suspicion of a more serious disease "

3 On August 27, we have a report of another commission, to which the name of the health officer of Alabama is added, stating "In reply to your request we have again investigated the fever at Ocean Springs, which is abating and absolutely without fatality The conclusion arrived at was *that it is not yellow fever,*"

4 On September 6, we have the following statement "The patient died Sunday night, and early Monday morning the expected autopsy was performed by the bacteriologist of the board in the presence of the medical gentlemen assembled. Unmistakable evidences of yellow fever having been revealed, we arrived at a unanimous verdict "

According to Dr Oliphant the grand total of cases in New Orleans did not reach 2000, nor the deaths 300, a mortality of 15 per cent based upon reported cases which would doubtless be much smaller if founded upon the actual number Another significant fact noted by Dr Oliphant in the epidemic, which verifies the history of previous ones in New Orleans and elsewhere, is that yellow fever does not burst forth suddenly, but gathers volume and force after smoldering for a time, e g it was introduced into Edwards, Miss, August 8, but gained no headway until the middle of September Confirmatory as to the remarkable mildness of the last epidemic[1] Dr L Sexton writes from New Orleans September 20, "*Our present death rate is lower than in any epidemic of yellow fever*, if the present death rate prevails throughout this visitation we will have to send around a subscription list for our undertakers "

What bearing have these facts upon conditions as they existed in Texas? In my opinion they are convincing when taken in connection with the clinical history of certain cases that the epidemic upon the Texas Gulf Coast was similar to that in Louisiana, Mississippi and Alabama, the results being modified by the late introduction of yellow fever infection and by the presence of unfavorable conditions for its dissemination It should be remembered that the declaration of quarantine by Galveston was made on September 10, nearly a month after the recognition of yellow fever at Ocean Springs, that the latter place is directly upon a common route of travel between eastern and Texas points, and that a month subsequently the diagnosis of yellow fever in Galveston and Houston was made by Dr Guiteras Under such circumstances it is not surprising that yellow fever infection should have been introduced into Texas, nor should it be a matter of wonderment that it should not have

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[1] American Medico-Surg. Oct. 1[illegible] [illegible]897 page 90[illegible].

Observer and location	Date of outbreak, proportion of population affected, duration, origin	Meteorologic and hygienic conditions	Symptomatology
Dr C H Wilkinson Galveston Southern coast Pop about 50 000, treated 500 cases "History of dengue epidemic in Galveston in 1897"	July 15, commenced in light form, suddenly, August 15, becoming more virulent and spreading rapidly 50 per cent. of population affected	Weather excessively hot and dry Sanitary condition said to be good	Eruption miliary, coming within 48 hours, appearing especially upon face and upper part of the body profuse perspiration Fever of one paroxysm lasting 3 to 4 days, declining by lysis Glandular involvement not noted Hemorrhages frequent, especially from the nose, also from stomach and bowels Nausea and vomiting noted especially after Oct. 1 Many specimens of urine examined, high specific gravity, albumin absent
Dr Geo H Lee, Galveston, has notes on 490 cases From article "Dengue or yellow fever" Reprint from N O Med and Surgical Journal	First case observed July 29, from San Antonio Subsided latter part of November Probably spreading from San Antonio	Not noted	Eruption occurred in two stages, first day hyperemia, in 80 per cent. a mild macular dermatitis coming on second to fourth day, ending in slight exfoliation Affection of glands noted in but few cases Hemorrhages in about 10 per cent from nose, gums, throat, uterus bowels and stomach one case, kidneys three cases Albumin examined for in about 50 cases 8 of which had previous kidney trouble, 20 out of the 42 had albumin on third and fourth day in 6 in large amounts Other characteristics and uremic symptoms not noted
Dr J M Coble, Dallas, D Co about 200 m n of Houston, R R center, pop about 50 000	Date of first case September 22, spread rapidly to various parts of the city, affecting *c* 6 per cent of the pop Arrested by cold weather November 1.	Weather continued warm until Nov 1. Local hygienic conditions poor in some sections	Eruption noted as slight in about 4 per cent Submaxillary glands enlarged in about 20 per cent Hemorrhages not noted, neither dysenteric symptoms urine examined in 25 per cent and slight albuminuria found in 10 per cent of these, slight nausea in a number
Dr Frank Paschal San Antonio, Bexar Co, S W Tex, *c* 150 miles from coast, elevation c. 1000 ft, pop *c* 5000	Outbreak began Aug 1, spread rapidly, soon affecting 75 per cent of the pop Lasted until about Oct 20 Possibly introduced by attendants upon the interstate drill July 19-26	Weather excessively hot and dry Sanitary condition very bad no sewerage, San Antonio River polluted, stinking	*Eruption present in possibly 90 per cent, coming on at end of the fever,* erythematous Hemorrhages and glandular involvement not noted Nausea and vomiting frequent and severe, present in 83⅓ per cent No dysenteric symptoms noted Albumin not examined for No uremic symptom noted
Dr W L Peeples, Navasota, Grimes County, about 70 miles north of Houston Population, 5000	Outbreak about September 1, attacking negroes only until middle of the month, when it spread to all classes and ages, affecting probably 50 per cent. of the population	Nothing noted.	Attack sudden high fever, low pulse severe epigastric pains, excruciating pains in back, head and extremities, the latter less severe Nausea and vomiting incessant Eruptions frequently absent in adults, almost invariably present in children Glandular enlargements frequent in the neck and surrounding regions hemorrhages quite frequent from gums, stomach nose, bowels, uterine appendages and kidneys No dysenteric symptoms in reality Albumin, from slight trace to abundance in urine, with almost total suppression (readily yielding to proper diuretic treatment) varying from a deep straw to blood color no casts and frequent uremic symptoms Prognosis always favorable (comparatively speaking) Albuminuria does not deter prompt recovery according to my experience
Dr R R Walker, Paris Lamar Co, near N E border Pop c. 10 000	Epidemic slight, began in July and continued until frost	Nothing unusual noted	Eruption present in but a small percentage, reddish papules appearing first upon face and exposed surfaces Glandular involvement and hemorrhages not noted No symptoms of dysentery Albumin present in 25 per cent of the cases, nausea and vomiting in 50 per cent.
Dr Geo R Tabor, Bryan, Brazos Co, c. 100 miles N W from Houston, population *c* 4000	First case reported Oct 10, a Polander, having been exposed a week previously in Houston The second case a German, also from Houston A week later a dozen cases and in the next thirty days about 100 The disease disappeared upon the advent of cold weather	Weather dry, not excessively hot, hygienic conditions good	Eruption present in 50 per cent, scarlatinaform and urticarial *glands* involved in two cases only, cervical Hemorrhages, percentage small, in one case resembled black vomit, coagulated blood in stools in this case Nausea and vomitng severe in most cases, with excruciating headache Albumin was examined for in only two cases and not found
Dr Taylor Hudson, Belton, Bell Co, *c* 150 miles N E from Houston and San Antonio population 5000	Began about September 1, spread to all parts of the town in twenty days, affecting 60 per cent of the population No evidence as to origin	Nothing unusual as to weather, hygienic conditions of the town good	Eruption not described, present in 50 per cent, glands not often involved hemorrhages noted occasionally from the nose and uterus nausea and vomiting in 80 per cent and in 20 per cent severe, dysenteric symptoms rare albumin only tested for in a few suspicious cases and found in several, urine diminished dark color, no blood noted, uremic symptoms pronounced in several cases
Drs Wilson Harris and Young, Navasota, Grimes Co., *c* 70 miles N W from Houston, population *c* 5000	Epidemic began about September 15, affecting about 75 per cent. of population, rapid spread declined about December 15, no evidence as to origin	Weather dry, no unusual heat, local hygienic conditions good.	Only a few examinations for albumin made none found no uremic symptoms noted *Eruption* present in about 25 per cent, resembling that of scarlatina and measles, at times confined to face and neck. Cervical glands and tonsils enlarged, as a rule in cases with rash *Hemorrhages* from nose, uterus, bowels, gums and kidneys occurred frequently *Nausea und Vomiting* in about 80 per cent often obstinate and severe *Albuminuria* examined only toward close of epidemic in about 50 cases, present in 40 in good quantity, diminished quantity and high colored urine, casts and blood cells in 8 cases uremic symptoms in 4
Dr Thos G Duncan Victoria, Victoria Co, *c* 125 miles S W from Galveston and Houston, near coast, population *c* 2500	Epidemic began about September 15, affecting about 33⅓ per cent of population in town and smaller proportion in the country No evidence as to origin	Weather dry and hot but not unusually so haziness of atmosphere was noted similar to that of 1867	*Eruption* in part of cases erythematous *Glandular* involvement not noted Heard of one case of black vomit nausea marked and almost universal, dysenteric symptoms not noted, no urinary symptoms noted
Dr E W Link, Palestine, Anderson Co., *c* 150 miles north of Houston, railroad center	Epidemic commenced about middle of September, spread rapidly, affecting about two thirds of the population Probable origin San Antonio and Houston	Weather hot and dry, local hygienic conditions bad.	Measly eruptions generally present, enlarged glands not noted hemorrhages in a few cases from nose and bowels nausea and vomiting not noted often dysenteric symptoms in a few cases albuminuria and other urinary symptoms not examined for
Dr W W Walker, Schulenberg, Fayette County, about midway between San Antonio and Houston Population about 1500	First case August 19, 90 per cent of population attacked, declined about Oct 10 for want of material, then spread to the country and continued until Dec. 10	Weather dry, little wind, temperature reaching 102 degrees in shade Local hygiene good	*Eruption* present in 90 per cent. irregular as to time of appearance and character *Glandular involvement* noted in about 4 per cent especially in children parotid, sublingual inguinal, suboccipital Suppuration in two cases *Hemorrhages* occurred in about 4 per cent from the nose, gums rectum in one generally from mucous membranes, in two so severe as to require repeated injections of ergotin In three cases black vomit *Stomach*, nausea and vomiting almost universal. Severe dysenteric symptoms in a few cases *Albumin* tested for only in worst cases and found in about ten, in some in large amounts
Dr J W Thomason, Huntsville, Walker County about 70 miles north of Houston Population about 2500	Sept 21 first case a young lady from Galveston, it was several weeks before other cases occurred in the same house though it was full of young ladies Other foci of infection were developed by parties from Houston and Galveston rapid spread after above date About two-thirds of the population affected Duration of epidemic about three months	Weather excessively hot and dry, no other form of sickness prevailing	*Eruption* present in ⅔ of cases erythematous miliary scarlatinaform and rubeoloid *Glandular* enlargements not noted *Hemorrhages*, out of 130 cases three had bleeding from stomach, in one the case from Galveston resembling black vomit *Nausea* and *vomiting* present in nearly every case, distressing in many Mild dysenteric symptoms noted in about 7 per cent Abdominal pains in region of appendix noted frequently

Ratio of pulse to temperature	Jaundice	Mortality	Progressive severity	Remarks
Pulse rate comparatively slow and regular many cases not above 81 or 100 with temperature 103	Began to be observed in a large proportion of the cases after Oct. 1. In most cases confined to conjunctivæ, in others upon face and coming on early in the fever	Does not believe there was a case of yellow fever in Galveston The Wade case was the most suspicious Diagnosis *acute infectious jaundice* Death certificate signed uremia	Distinctly noted mild in the beginning, latter part of July and August More severe in September and still more virulent in October	Conclusion The Wade case was not yellow fever because of survival beyond usual duration, intense nausea and protracted retching instead of easy vomiting calm indifference to surroundings, lack of postmortem, evidence of fatty degen of kidneys or liver and of hemorrhages
Want of correlation between pulse and temp occurred so frequently as to be almost the rule e g temp 102.8 pulse 66, temp 103 pulse 80 This condition noted in some from beginning and in others after second paroxysm	Jaundice of mild grade was the rule from first to last not of the skin, for this was noticeable slightly in a very few but a slight yellowness of the conjunctivæ	Practically no mortality, one death in which dengue occurred as a complication of a previously existing interstitial nephritis Does not believe there was any yellow fever in Galveston during the past season	Not specially noted	Temp usually high in beginning, came (after slight remission) high again toward end of attack Duration on average, 4 days in mild cases 3, in 50% 5 Conjunctivæ usually mildly injected Also hyperemia of face and neck. Neuralgic symptoms marked in 90% of cases in head, back and limbs
Not noted	Marked and noted in 30 per cent	No deaths Suspected yellow fever at first owing to jaundice, nausea and vomiting and temperature	No difference in severity as epidemic progressed	
Abnormally slow	Not noted	No mortality Yellow fever not suspected	Increased	
Generally abnormally slow in proportion to height of temperature e g, pulse 45, temperperature 100 pulse 80, temperature, 105 5	More or less present	No mortality Recognized analogous symptoms but did not suspect yellow fever	Very little difference in severity as the epidemic progressed	Continued during January, 1898 Noticed several sequelæ, one of them falling of the hair during second and third months after recovery
Normal	None noted	None	But little difference	
Pulse about 120, with temperature 103–105	None noted	No deaths Not suspected	No increase in severity as epidemic progressed	Small number of cases ascribed to extraordinary sanitary precautions and strict quarantine
About normal	Mild in 10 per cent severe in 2.5 per cent	One death from uremic complications case seen in consultation no autopsy No	No difference	
In 50 per cent cases abnormally slow pulse in proportion to temperature	Jaundice in 75 per cent more or less marked	No deaths Suspected from symptoms but lack of mortality precluded such an opinion	No marked difference as epidemic progressed	More severe with old people children suffered comparatively little
Not noted	Found in a few cases	No mortality in the absence of complications The case of suspected death from yellow fever turned out otherwise No	Decrease in severity as epidemic progressed	
Not noted	Noted in a few cases where nausea was marked and hard to control	Two deaths one with uremic symptoms and one from bowel complications Is not sure they died from dengue occurred in the practice of Dr Evans No	Not noted	
Abnormal slowness of pulse in proportion to temperature noted in several cases with temperature over 100, pulse would range from 50–60 and 65	Observed in 4 per cent to a slighter degree in about 7 per cent	Lost but one case which was complicated by acute rheumatism and mal assimilation Only one other death from dengue, but a number of old persons have died during following winter from failure to recuperate Symptoms of some cases so nearly approached those of yellow fever, unable to discriminate	Epidemic increased in severity for about six weeks or until it subsided for want of material	Dr Walker is familiar with both yellow fever and dengue
Pulse slow in proportion to height of temperature In one case pulse 72 temperature 102½ In another pulse 90–96, temperature 103–104	Jaundice noted in about 7 per cent Gastro duodenal catarrh to some extent in most cases	No mortality No	Worst cases in beginning and middle of the epidemic	

Observer and Location	Date of outbreak, proportion of population affected duration origin	Meteorlogic and hygienic influences	Symptomatology	Remarks
Dr Robert T Morris, Houston, Harris Co, fifty miles from coast, railroad center population about 60,000	About September 1 mild at first rapidly spreading in three weeks, affecting a large proportion of the population	Not noted	Paroxysm—Single Temperature—Rises regularly Duration—Three to five days Tongue—White center red pointed Conjunctivæ—Injected Stomach—Irritable and nausea. Vomit—Frequent Neuralgic signs—pain in head, back and stomach. Fruption—Erythema noticeable Jaundice—Frequent, especially in conjunctivæ Secretions—Deficient Urine—Diminished albuminous Hemorrhage—Freqnent and alarming, black vomit Mortality—About thirty deaths Pulse—Divergent pulse and temperature frequent	In the January 1898 number of the S W Med Record Dr Morris discusses the nature of the epidemic in Houston from this article the following is a condensed statement He shows 1 how infection may have occurred by refugees from Ocean Springs before quarautine was declared 2, that the cardinal symptoms of yellow fever were present in many cases viz the characteristic fever divergent pulse and temperature jaundice scanty suppressed and albuminous urine, black vomit in three cases a connecting link was noted between anomalous cases in several instances An increase in the mortality rate of 20 over that of the preceding year was noted 11 deaths ascribed to senility 5 from dengue 11 from enteritis and gastritis 10 from fever, 1 from meningitis and 5 from kidney diseases

been generally recognized when we take into consideration that it came in the guise of dengue, was introduced late in the season, into localities where the conditions were unfavorable for its spread, and that according to all testimony, it was the mildest epidemic of yellow fever ever known in the history of the country

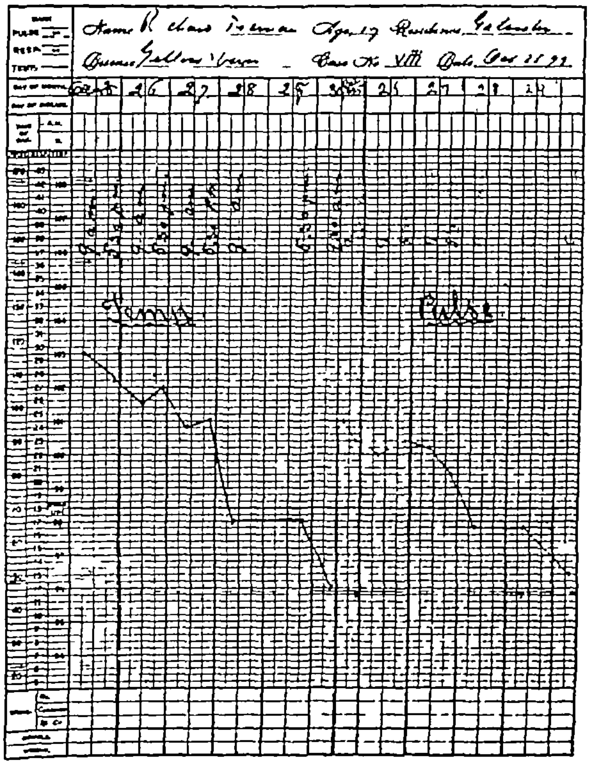
Admitting that there is greater similarity in the symptomatology of the two diseases than has heretofore been acknowledged, the question arises, how can they be differentiated? In my opinion chiefly by the symptom complex of an acute nephritis in yellow fever and its absence in dengue In the latter, simple parenchymatous changes may occur in the kidneys and be manifested by an evanescent and mild albuminuria While in the former in a series of cases many will afford incontestible evidence of the occurrence of a severe nephritis, viz, scanty urine, of high color and specific gravity, intense and persistent albuminuria, hematuria, casts, decided tendency to suppression and the accompanying uremia

The following are brief clinical histories of the three cases, reported by Dr R T Morris occurring in Houston[2] and one from Galveston reported by the writer

Case 1 —Oct 23, N J, aged 28, was called late in the evening, found patient suffering with anorexia, pain all over body, but especially marked below knees, constipated but urinating freely, temperature 103, severe frontal headache, no albumin in urine Prescribed castor oil, and being called out of the city, did not see patient till three days later, when he was found to be very low, pulse hardly perceptible, not over fifty four to the minute, retching but no vomiting, urine heavily loaded with albumin, total amount voided in twenty four hours three pints, patient muttering to himself, but on speaking loud to him could be aroused, and would give intelligent answer, although a few minutes after conversation ceased he would drop back to unconsciousness, at 6 P M vomiting of a coffee ground-like substance set in, not more than a tablespoonful every hour till next morning, when, of a sudden, without any effort whatever, a gush of same kind of vomit was ejected, amounting to at least a pint and a half Inside of fifteen minutes after this vomit patient expired, and after ten minutes his corpse was of a decidedly yellow tinge, and dependent portions discolored like after severe bruising

Case 2 —September 19, called to see I R. F, male, aged 22 found what I believed to be incipient dengue, reported improved by the 21st, on the 22d recalled in haste, on arrival found patient comatosed, pulse 56, temperature 103 5 degrees, on arousing he told me, and the statement was confirmed by his mother, that all urine he had passed since the day before (in all 28 hours) was in a vessel under the bed By ocular inspection was found to be very dark and muddy, smell strongly ammoniacal, examined at office, albumin in great quantity, nearly solidifying in test tube Returned at once to patient, found him again in comatose condition and having voided a small quantity of urine which had strongly colored the linen Prescribed tincture digitalis, ergot, spirits juniper and liquor ammoniæ acetatis. Recovery uneventful but exceedingly slow, yellow tinge in eye appeared as late as 26th, disappearing after forty eight hours

Case 3 —R T Jr, native of Galveston, aged 16, of robust constitution and previous perfect health, was taken sick suddenly October 24 in the afternoon, with a slight chill followed by high fever, with intense headache, pains in the back, limbs and joints At my first visit on the 25th, as soon as the room was entered a peculiar nauseating odor was perceived, the eyes were watery and red with a yellowish tinge, the skin was decidedly yellow, the gums were softened and disposed slightly to bleed, anorexia was marked, tongue coated and red at its tip and edges, excessive nausea and disposition to vomit everything swallowed, bowels had moved from a purgative The patient was nervous and indisposed to sleep The course of the fever is typical and is exhibited in the accompanying chart It should be noted that when a normal temperature was reached on the 28th, the fifth day of the fever, that the pulse dropped to 64, and that on the 30th when the temperature was subnormal the pulse was 50 The stomach continued to be irritable, there was epigastric tenderness On the night of the 29th blood was vomited in small quantity, the urine was scanty, of high color and specific gravity A heavy precipitate of albumin was found on the 29th, also granular casts Daily examinations showed albuminuria during the following eight days, after which it gradually subsided as the urine became paler and more abundant. The albuminuria was more intense during the stage of depression After a tedious convalescence recovery ensued My diagnosis of a severe attack of yellow fever was confirmed by Drs McLaughlin and Magruder, both of whom have had experience with this disease



It is useless to add any comments or summerize any

S W Med Record January 1898, p 415

other cases with similar histories What other diagnosis could have been made than that of yellow fever *Anomalous dengue* was one of the names suggested during the recent epidemic, if this is dengue, then the identity of that disease and yellow fever is established When pressed for a diagnosis in certain of these cases, some of the Galveston experts denominated them Weil's disease, or acute infectious jaundice, which is manifestly such a far fetched conclusion that words would be wasted in its refutation

One of the arguments which has been repeatedly used against the existence of yellow fever in Texas during the past season, was the want of mortality Upon this point let me quote Dr Morris again[3] "From Oct 1, 1897 to Nov 18, the death rate in Houston was 33⅓ per cent greater than in the corresponding period of 1896" The causes given in death certificates are as follows senility 11 (four of whom were not over 60), dengue 5, enteritis and gastritis 11, fever 10; meningitis 1, kidney disease 5 The record of Galveston does not show any increase of deaths during the months of August, September and October over the previous three years There were five deaths however preceded by symptoms of yellow fever, it is a signicant circumstance that in four of these uremia was given in the certificate as causes of death In the other, congestion of the lungs was mentioned as the primary, and bilious fever as the remote cause

Those who deny the existence of yellow fever in Texas during the past season rely chiefly upon the apparent indisposition of the disease to spread from numerous foci In other words, they contend that the presence of the infection necessarily involves its dissemination No extended argument is requisite to demonstrate the fallacy of such conclusions The pathogenic micro-organism of yellow fever is a facultative parasite, but its ordinary mode of life is saprophytic It grows and develops outside of the body when the conditions are favorable for its reproduction The seed may fall by the wayside, or upon a rock, or among thorns and wither away, or upon good ground and spring up and bear a hundred fold The fact that the soil of Texas was an unfavorable one for the multiplication of the yellow fever germ last season is an adequate explanation of the history of the recent epidemic It is not contended that the hygienic condition in these cities was perfect, but that the combination of circumstances was antagonistic to the extensive dispersion of the infection Instead of being a blot upon the sanitary escutcheon of Houston and Galveston, it is another demonstration of the fact which has previously been observed, that yellow fever may be brought to these places without necessarily involving an extensive epidemic or serious mortality Two important lessons should be emphasized, 1, the urgency of promptly recognizing the early cases and calling them by their proper name, for by this means only may subsequent disaster in many instances be averted, 2, we should put our houses in order, in other words adopt every possible method of domiciliary and municipal cleanliness Napoleon is said to have remarked that "Providence was on the side with the strongest artillery" When yellow fever is around Providence is on the side of the town with the best system of sewers Again, it has been demonstrated that yellow fever may masquerade in the garb of dengue and that the latter is a portable disease, leaving out of the case the probable association with yellow fever, it became a serious question whether dengue should not be considered a quarantinable disease The suffering and expense incident to an extensive epidemic like the one of last season would certainly appear to justify measures of prevention

DISCUSSION

Dr Kinyoun of the U S Marine Hosital Service—I have had some experience with yellow fever and dengue Dr West's paper is a very able one and he has gone into the points in differential diagnosis very thoroughly I recall the history of the epidemic of dengue which occurred last year, April 12 The crucial test was made In certain cities, not purposely but as a matter of convenience, persons were employed as disinfectors who had had dengue previously, none of these had the fever Catarrhal jaundice, dengue and mild yellow fever are unfortunately closely allied And when we take this fact into consideration in the epidemic of last year it will be known that many cases of dengue were reported which were not dengue at all but mild cases of yellow fever

Dr Brewer of Texas—Jaundice occurs in about 50 per cent of the cases There were 600 cases and there were no deaths attributable to dengue fever There was great excitement in the whole country but when it was found that there were no deaths following this epidemic, the excitement abated

H A West of Galveston, Texas—I regret, Mr Chairman, that this subject has not been discussed more fully, as the situation in Texas, imperfectly sketched in the paper, was of the most interesting a medical man is ever called upon to encounter. I would like very much to have heard the opinion of those whose experience has been wider than mine, especially as the narrated facts appear to controvert the generally accepted views as to the differential diagnosis of the fevers under consideration The diagnosis of yellow fever in Galveston and Houston made by Dr Guiteras was fought to a finish by the public prints, the people at large and by the majority of the physicians It was iterated and reiterated that 'yellow fever kills," "there is no such thing as mild yellow fever" and woe betide the man who had the temerity to raise his voice against the verity of this assumption The actual mortality was hidden by certificates giving as the causes of death "senility, dengue, uremia, bilious fever, etc." The argument was sophistically presented by some as in the title of a paper upon the subject, "Dengue *or* Yellow Fever," that is to say it must be one thing or the other and leaving out of view entirely the probability of the concurrent prevalence of the two diseases I have presented the facts, which are conclusive to my mind, that such was the case also that yellow fever is not always and necessarily attended by a terrible mortality (this is one of the most instructive lessons of the recent epidemic, not only as to Texas, but in the regions east of the Mississippi), that it may not rapidly spread from numerous foci, that the symptomatology of yellow fever and dengue approaches more intimately than has hitherto been taught, and that in the light of the facts I have presented, the differential diagnosis of these fevers will have to be rewritten

RARE CASES OF ARHYTHMIA

Presented in the Section on Practice of Medicine at the Forty ninth
Annual Meeting of the American Medical Association, held at
Denver Colo June 7 10 1898

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Arhythmia is a symptom that is common to many diseases and conditions, but the scope of the present article is limited principally to the clinical features of certain forms of the disorder not hitherto described, that have fallen under my observation The examples that I shall adduce are too few to establish tenable hypotheses, either in their etiologic or clinico pathologic bearings, yet they present points of rare clinical interest

The first case occurred in the person of a physician, aged 40 years, who had been an abuser of tobacco for a protracted period, having habitually smoked from eight to twelve cigars [illegible] family hist
undubitable [illegible] endency

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[3] S W Med Record, January, pp 413-414

patient himself had suffered from acute articular rheumatism on two different occasions. A careful physical examination permitted the positive exclusion of organic valvular diseases, and the probable elimination of other structural affections of the heart. Nor were any of the usual causative morbid conditions that usually precede or are found associated with arhythmia present, except the tobacco-habit.

The functional disturbance of the heart first assumed the form of true palpitation—i. e., the patient perceived the rapid cardiac pulsations, at the same time experiencing considerable mental anxiety and slight anginose pains. A little later a curious, and so far as I know, peculiar form of arhythmia manifested itself. For example, on auscultation four sounds could be distinguished during cardiac rhythm, and it seemed clear that both the first and second sounds of the heart were reduplicated. The fact that the first sound was doubled was confirmed by the pulse, which was felt during the auscultation of the heart, the pulse-wave appeared to strike the palpating finger at the wrist synchronously with the second (feebler) element of the systole, while the impulse at the apex coincided with the first (stronger) element of the first sound. The pulse showed the modified double beat (*pulsus bisferiens*) when moderate pressure was made upon the radial. The *pulsus bisferiens* has been most frequently met with in combined aortic incompetency and aortic stenosis. The case here recorded is the only one (apart from a double aortic lesion) in my experience in which this form of pulse was typically shown. It is doubtless dependent upon double ventricular contraction. Elevation of both arms, so as to increase the force of the blood stream in the direction of the left ventricle, increased somewhat the irregularity, and accentuated the distinctive arhythmic features above described.

Broadbent[1] points out, also that "The *pulsus bisferiens* can not uncommonly be induced by an effort, which throws additional work upon the heart, for instance, in one case it was not present while the patient lay quietly in bed, but was brought out when he held up both his hands."

Cardiac action, in my case, was accelerated, the radial pulse ranging from 100 to 108 per minute. In a general way, the heart sounds resembled those of the well known canter rhythm, in which there is an interpolated sound, due in a majority of cases to the splitting up of the second sound, but in the instance under consideration, a second interpolated sound was heard, following immediately upon the impulse, and it was ascribed, as before stated, to a double systole. To clearly show that the double second sound was a genuine reduplication in this case, I would direct especial attention to the following points: first, it was most distinctly heard at the base, secondly, the two elements of the duplicated sound were separated by an exceedingly brief interval, and finally, that both strongly resembled the normal second sound.

True reduplication of the second sound, which depends upon "a disturbance of the relation which normally exists between the pulmonary and aortic pressures," results from a great variety of causes. It is a well-established fact that in conditions in which the pulmonary tension is unduly high (mitral stenosis, etc.,) doubling of the second sound is common. Arthur G. Phear[2] states that it may be met with in cases of anemia and debility, conditions that were not present in my cases. Phear has made an analysis of twenty-five cases of which detailed notes were available, with the following results: "*a*, mitral murmurs were present in ten cases, in five of which the murmur was presystolic only, in four systolic only, and in one double, *b*, in twelve cases, exclusive of the ten with mitral murmurs, anemia or debility was present, the individuals in many instances being convalescent from some acute febrile disease, *c*, two cases of acute lobar pneumonia, and *d*, in one case there was hypertrophy of the heart, with high tension pulse, and 'bruit de galop' audible at the apex."[3]

I have carefully excluded so-called simulated reduplication, which is audible at the apex only, while at the base a single second sound is heard. Simulated reduplication, a rare condition, can not for lack of time and space be further considered here. A sphygmogram could not be conveniently obtained.

The patient was strongly advised to discontinue the smoking habit, and at his next visit, one month later, the peculiar form of arhythmia, to which the term "double reduplication" of the cardiac sounds might be appropriately applied, had practically disappeared. Since then mild attacks of palpitation at long intervals, particularly as is usual on assuming recumbent posture at night and an occasional intermittences have been experienced.

A second instance of so-called "double reduplication" was observed in a female, under my charge in the Medico-Chirurgical Hospital, aged 43, single, suffering from exophthalmic goiter in the advanced stage. The latter affection followed prolonged physical and mental strain. All of the characteristic symptoms had apparently developed in their usual sequence, i. e., tachycardia, muscular tremor, exophthalmos, and lastly, thyroidean enlargement. The cardiac impulse at the time of my first examination was greatly exaggerated, percussion dulness increased slightly, both to the right and the left, and auscultation rendered audible a blowing murmur over the base of the heart, while the valvular sounds were accentuated.

There was probably slight cardiac dilatation (secondary to functional hypertrophy) present, a common incident in this disease. The case immediately prior to admission (February 28) had, as stated before, reached an advanced period, with constant and markedly irregular action of the heart (*delirium cordis*). Twenty-four hours before death a gallop rhythm was clearly distinguishable on auscultation, while twelve hours previous to death, or at my last examination of the case, both the first and second sounds were apparently reduplicated. In this instance, also, the pulse was felt at the same time that auscultation was practiced. The pulsus bisferiens was not present. The redulplication in this instance, as is usual, was most clearly heard when the stethoscope was placed partly over the left and partly over the right ventricle near to the apex beat. It was obviously caused by asynchronous contraction of the two ventricles.

A third case of arhythmia, while manifesting distinctly peculiar and rare features, was associated, as commonly occurs, with marked obesity. M. W., aged 58 years, widow, childless, weight 280 pounds, complexion ruddy, consulted me August 10, 1896, on account of inordinate dyspnea on slight exertion, and gastric disturbance. The family history was negative, excepting the presence of positive evidence of a slight gouty taint The patient had begun to take on flesh in a slow and gradual manner twenty years previously, though actual lipomatosis had not existed for more than ten years

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[1] Heart Diseases, With Special Reference to Prognosis and Treatment, p. 143.

[2] Lancet, January 9, 1897.

[3] Loc. cit.

Condition at the time of examination —The pulse was found to be wholly irregular, both in volume and rhythm, and increased in frequency to an average rate of 96 while the patient was at rest On auscultating the heart while the pulse was felt at the wrist, it was noted that systole occasionally failed to send a pulse-wave to the radial that the palpating finger could detect Upon careful and repeated physical examination, which although far from satisfactory in its practical results on account of the enormous deposits of fat, valvular affections of the heart were not demonstrable On the other hand, apart from the arhythmia noted before, nothing but the evidences of marked obesity and a feeble, muffled cardiac first sound were present

As stated above, the condition at the time I first examined the case took the form of "combined arhythmia," i e, irregularity in both volume and rhythm Shortly after, a typical "pulsus alternans" was occasionally noted Recently, while the patient was suffering from an attack of influenza, I observed the "pulsus alternans" along with a modification of the rhythm that suggested an analogy to the Cheyne-Stokes type of breathing For example, after a comparatively short pause, or an intermittence, both the pulse and heart beat would begin at a slow rate and gradually increase in frequency for from eight to ten beats, at which moment the heart action would be quite rapid, to be followed by a second, abrupt pause, and so on

There was present at the time the signs of a dry form of bronchitis (cough and sibilant râles on auscultation), with slow, asthmatic breathing superadded The periods of exacerbation or increasing acceleration of the cardiac contractions coincided, in the main, with the latter part of the inspiratory element of the respirations, while the pause following was synchronous with expiration The remarkable influence of the respiratory function upon the cardiac action was further shown by the fact that during the held breath the heart rhythm at times became almost regular, at others it merely manifested decided improvement I had previously witnessed occasional intermittence and the 'pulsus alternans" in *morbus adiposis,* but not the peculiar form of pulse or cyclical increase in the rate noted in this instance Kisch[4] contends that the "twin pulse" and obesity are conditions frequently found in association

In the not infrequent irregularity of the cardiac action met with in the obese, an affection of which this case is a well marked example, I am inclined to believe that the condition is in great part dependent upon mechanical interference with the movements of the heart That this embarrassment, however, is not wholly attributable to the depositions of fat, but partly to the respirations acting upon a heart already enfeebled by the toxins of influenza, is shown by the effect of a suspension of the latter function in the case reported above Nothnagel[5] has emphasized the fact that in meningitis the pulse may vary from minute to minute, the slow pulse, as in my own case, may suddenly increase greatly in rapidity, and again become retarded Baumgarten[6] holds that these sudden oscillations are dependent solely upon central irritation In the case reported here, however, the rise and fall of the pulse occurred almost synchronously with the respiratory acts, the variations or cycles occurred, therefore, from ten to twelve times in a minute Again, it is a not infrequent matter of observation to find the presence of murmurs and various forms of arhythmia whose existence is totally dependent upon the influence of the respirations In this connection, I may state that I have observed cases in which apical systolic murmurs were audible only during the latter part of inspiration and the beginning of expiration In one of these the murmur could be maintained for a considerable period during held inspiration In another case, an occasional intermittence was also noted on inspiration Neither of these two cases presented any evidences of organic or structural changes of either the heart or lungs, they both occurred, however, in neurasthenic subjects The significance of the forms of arhythmia that I have described can not be positively stated, but they are probably grave in cases in which the cause or causes are not readily removable, as for example in the case of exophthalmic goiter reported above that proved speedily fatal

In conclusion, I desire to restate in sequence some of the most interesting points embodied in this paper

1 The presence of reduplication of both first and second sounds (double reduplication) in the first two cases, one of tobacco poisoning, the other exophthalmic goiter

2 The occurrence of a typical *pulsus bisferiens* in case one, dependent upon the toxic effect of tobacco, in the absence of combined aortic regurgitation and stenosis

3 The presence of a cyclical increase in the rapidity of the movements of the heart, followed regularly by a brief pause, and the striking effect mechanically of the respiratory function upon this peculiar variety of arhythmia

4 The temporary production of apical systolic murmurs during the inspiratory element of the respiration

5 That all of the cases developed in subjects in whom previously existing valvular lesions of the heart, so far as determined, were absent

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THE PRESENT STATUS OF VACCINE AND VACCINATION

Presented to the Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association held at Denver, Colo , June 7-10, 1897

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It will not be attempted in this article to go into a historical resumé of vaccination, but it may be profitable to discuss briefly the relation existing between smallpox and vaccinia Since the beginning of this century, numerous experiments have been made to determine whether they are distinct diseases with interchangeable immunity, or whether vaccinia is an attenuated smallpox obtained by its passage through an animal of greater resistance Gassner in 1801, Sunderland in 1828, Thiele in 1836, Ceely about the same time, Babcock in 1840, and later experimenters such as Voight, Fischer, Haccius, Eternod, Copeman and Klein have all been able in one or more cases to produce vaccine by passing variolous material through cattle Probably King of Madras, 1891 or 1892, has reported the most striking results, in which more than 400,000 persons were vaccinated with lymph thus produced, without reverting in any particular to its origin—smallpox Frequently the first remove will not sufficiently attenuate the lymph, so that its inoculation in the human may produce symptoms similar to variola, as is instanced in Martin's cases, 1836, Reiter's, 1839, and Chauveau's in 1864 This may be corrected, however, by making a number of removes through animals before attempting to vaccinate the human subject These observers, therefore, believe that the two diseases have a common origin The most prominent modern objectors to this theory are Chauveau and Cruikshank Chauveau, as President of the Lyons Conference, reported in 1864, that the two diseases were entirely distinct, though vaccination produced immunity from smallpox, and vice versa, by direct antagonism, in 1891 he reaffirmed his previous position, stating that "Vaccine virus never gives variola to man, nor does the virus of variola ever produce vaccinia in the ox or horse The two viruses can not, therefore, be reduced to a single virus" Cruikshank, who with the pertinacity of an Englishman for preconceived notions, after referring to the numerous results obtained by other investigators, calmly says that they are mistaken, and that virus obtained from the variolation of cattle was not vaccine at all, but modified variola, though he is careful to give no test by which we can distinguish between the two diseases

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[4] Berliner Klinische Wochenschrift, Berlin, March 18, 1895

[5] Deutsche Archiv für Klinische Medicin in 1876 quoted by T A Claytor, University Medical Magazine January, 1898

[6] Transactions of the Association of American Physicians, Vol iii, 1888

Copeman in 1896, after a careful review of the evidence on both sides, sums up as follows in speaking of inoculating calves with smallpox virus "The final results, however, after greater or less number of removes from calf to calf, has been invariably the same, namely, the production of a local vesicle, indistinguishable by any means at our command such as the appearance and course thereof, or the protective power of the lymph derived therefrom, from true vaccinia"

VACCINATION FROM THE STANDPOINT OF BACTERIOLOGY

Having determined that vaccinia is only an attenuated smallpox, it follows that the active principle must be the same in both Numerous investigations by eminent authorities have failed to this time to prove anything definite, as to its identity Chauveau in 1865 reported the following results of his investigations, he found vaccine lymph to be composed of a fluid part in which there were white corpuscles, and a number of granules many times smaller than the leucocytes These constituents were separated by diffusion, and it was shown that in inoculation it was the granule alone that communicated vaccinia But little advance has been made from this position today Copeman in 1891 reported a series of experiments which appeared to prove that the active principle was in the solid constituents of the lymph After filtration the liquid had no potency while the remaining solid matter produced normal vaccine vesicles This I verified in 1895 with material filtered by Dr Kinyoun, the animals vaccinated with the fluid after filtration showing absolutely negative results This would seem to show the particulate nature of the virus

Martin in 1891 (reported by Ernst in 1893), obtained a bacillus from the lymph of a vaccine vesicle, which he believed to be the infectious agent He claimed that the ninth generation on blood serum produced a typical vesicle in the calf He says, however, "These cultures were not pure, but contained quite a variety of bacteria, in every instance blood serum was liquified" He states that what he considers the specific agent varies in form, according to to the various conditions of its nutritive environments, and consequent rate of its development The most constant form is a short, fine bacillus, with rounded or nearly square ends According to his own testimony, he had not isolated a specific organism

In 1891 or 1892, Copeman, with Kent and Klein, though working independently, claimed to have found a bacillus described as follows 1 μ in length and one-half as thick, heavily stained at ends, almost unstained in the middle, possibly spores Found also in tissues in groups of from two or three to ten This organism cultivated by special methods was inoculated into a calf, which on the fourth day produced a vesicle indistinguishable from that produced by vaccine In 1896, Copeman reports still further results with this organism, describing a more or less imperfect method of cultivation Pure culture obtained after one month's growth produced typical vesicles in a calf, which protected it from subsequent vaccination or variolation Children were also vaccinated successfully with material taken from a calf vaccinated with this culture I have not been able to find any further report from Copeman, but it is said that after further investigation he has abandoned this bacillus as the cause of vaccinia or smallpox

Since Laveran's discovery as to the malarial organism, investigators have been tempted to make special examination of the blood, thinking that probably the parasite might be of an animal nature Guarnieri and Pfeiffer have called attention to organisms in the lymph which they believed to be of the nature of a parasitic protozoon and the probable active vaccinia principle These results seemed to warrant further investigations, and Dr Walter Reed, U S A, in 1897, in an exhaustive research covering a period of five months, made a report in which he confirmed the results of Pfeiffer, in that small ameboid granular bodies in the blood of children and monkeys who had never been vaccinated, though not in such large numbers Dr Kinyoun's researches at the laboratory of the U S Marine-Hospital Service about the same time would seem to warrant similar conclusions He found them also in animals not vaccinated These researches would suggest that these bodies are in the normal blood and are probably increased in large numbers as the result of inflammation, and it is certainly not proven that they are the active principle of *vaccinia*

As to what are termed by Copeman "extraneous bacteria," the literature on this branch of the subject is so profuse that it will only be possible to make a summary Probably the most complete research along this line has been made by Cruikshank extending over some years He has found in the various stocks of lymph, staphylococcus pyogenes aureus, staphylococcus pyogenes albus together with a large number of saprophytic bacteria The streptococcus has been reported by Copeman and Whitlow Dr Reed examined the points from six vaccine farms and found staphylococcus albus and aureus in all the plates I, myself, in examining lymph at various times from several sources have almost invariably found the staphylococcus albus and aureus and frequently the streptococcus, and in one instance, finding that the vaccinations on heifers seemed to produce excessive discharge and tissue necrosis at the point of inoculation, I took cultures and found the predominant bacterium to be the streptococcus This is simply one illustration of the importance of bacteriology to the production of vaccine lymph Weaver, instructor of bacteriology of Rush Medical College, obtained points from four producers as sold in Chicago and in the cultures from all found pathogenic organisms Futterer examined seventy-five ivory points from different sources and found staphylococcus aureus in fifty five, staphylococcus albus in about the same number and the streptococcus of erysipelas and phlegmon in ten I have also found in numerous cultures from vaccine a short motile bacillus with rounded ends, resembling the pseudo diphtheria in grouping, growing on ordinary media, but in bouillon producing a pellicle which falls to the bottom in flakes This bacillus is poly-morphous, taking different forms so frequently in its cultivation as to make it difficult to prevent contamination, as most frequently found the staining is bi-polar This organism has been noted by Dr Carrol I am inclined to think that it is the bacillus reported by Martin, the contamination reported by Ernst being probably the changing forms of this organism It is pathogenic to white mice The press of other work has precluded a further investigation, but I expect to continue it in the near future

The finding of extraneous organisms in the lymph is so general and in such large numbers as to suggest the possibility of numerous accidents accompanying or produced by vaccination, and in fact, we all know that intensely sore arms are so frequently the result of vaccination that the laity and, in fact, some physicians suppose that there is no protection without this local necrosis and its attendant symptoms We now know that the most of this inflammation is due *to extraneous pathogenic organisms* and is not the legitimate result of vaccination In addition to this unnecessary local condition, numerous instances of systemic poisoning are reported which evidently are not necessary to vaccinia Thus Fox reports cases of more or less pronounced dermatitis, also mentions the "lamentable occurrence of septecemia and pyemia," as well as the rarer complication of tetanus Further on he says "Erysipelas is from its frequency and gravity the most important disease in this group " And again remarks that "more or less profound ulceration and even gangrene is not a very rare sequel to vaccination " Probably the most common affection of this group is contagious impetigo This is a benign affair, but none the less a source of grave anxiety and consternation to parents

During the Civil War vaccination with septic lymph or crusts resulted in hospital gangrene, tetanus, pyemia, septicemia, etc

That syphilis may be produced no one will deny when humanized lymph is used Dr Arning detected the bacillus lepræ in the lymph and crust of a vaccinated tubercular leper Dr Fox reports three cases of lupus in vaccination scars Professor Toussant vaccinated a tuberculous calf with lymph from a healthy infant The lymph from the pustule in the calf was inoculated into four rabbits, a pig, a cat and a pigeon, two rabbits killed two months later displayed local glandular and pulmonary tuberculosis, a third killed on the 218th day and the fourth on the 246th day were tuberculous I am aware of conflicting reports, yet when such results have been obtained by competent observers we can not close our eyes to the danger of tuberculosis resulting from tuberculous lymph

We might continue indefinitely multiplying examples of accidents reported from the use of infected lymph, but this is unnecessary, as any thinking man must see that bacteria of all kinds are liable to grow in an open wound, and that the bacteria produced in the lymph must be carried in the lymph and be inoculated with it in the human subject Experimenters recognizing the strong position taken by the antivaccinationists in reference to these facts, have been trying for years to produce a lymph devoid of bacteria, or failing in this, to effect the destruction of the pathogenic bacteria before using it for vaccination purposes The former condition being impossible, efforts have mainly been directed to the destruction of these organisms without injury to the lymph

Carsten and Coert, in 1875, found that sufficient heat to kill the bacteria also destroyed the lymph Attempts at filtration were then tried, resulting as I previously mentioned, in the destruction of the lymph Copeman, in 1891, published the results of some investigations looking to the use of glycerin as a germicide, since Mueller, Straus and Chambon and Ménard had been using it for some time as a lymph preservative He made a still further report in 1893 Here he states "Lymph which originally gave only mediocre results, after fifteen days in glycerin produced a passible pustule, after forty, fifty or sixty days a typic one The improvement seemed due to the gradual extinction of parasitic microbes under the influence of glycerin and time " After reading this report in 1894, I began the preparation of the glycerinated lymph, and, while my results were not so flattering as those of Copeman with glycerin as a preservative, there can be no doubt that it brings about gradually the destruction of the germs The hay bacillus and the unidentified bacillus formerly mentioned by me being the only ones to survive any considerable time, and I am moreover of the opinion that the germs originally pathogenic are attenuated by the action of the glycerin, even though they may grow when planted on artificial media This point, however, requires further investigation

In October, 1894, Dr Ralph Walsh of the National Vaccine Establishment, Washington, D C, read a paper before the American Public Health Association, Montreal, in which after discussing Copeman's results, he says "The admixture of glycerin with vaccine lymph will destroy all extraneous bacteria without injury to its peculiar active principle," and further, "the admixture of glycerin with vaccine lymph not only destroys extraneous bacteria but prolongs the activity of the lymph " In May, 1896, Dr Sternberg, Surgeon General United States Army, read a paper at Atlanta, Ga , in which the following conclusions were arrived at

"Various bacteria are commonly found in the lymph from vaccine vesicles obtained either from bovine animals or from man Among these are the well-known pus cocci and these micrococci are probably largely responsible for the erysipelatous inflammation and other unpleasant complications which frequently result from vaccination with such lymph "

Again, "lymph preserved in glycerin after a time becomes sterile so far as the presence of bacteria are concerned without losing its specific virulence"

In October, 1896, Dr George H Weaver of Rush Medical College read an article describing the bacteriologic contamination of vaccine lymph and the preservative action of glycerin His conclusions are as follow

"1 Vaccine lymph always contains bacteria, often of pathogenic forms

"2 Pure vaccine lymph, after keeping in a fluid state or dried on ivory points as now prepared, is unfit for use and often dangerous

"3 Vaccine lymph diluted with pure glycerin and distilled water becomes sterile in about two weeks and should not be used sooner"

In 1897 a committee consisting of Richard Thorne Thorne and Copeman, appointed by the Local Government Board of London to visit the cities of Europe and examine methods of preparing, storing and using vaccine lymph, reported in an exhaustive paper of over thirty pages the methods in Paris, Dresden, Berlin, Geneva, Brussels and Cologne I can only give several extracts as follows

"In only one of the places visited, namely, Paris, did we find that vaccination was carried out under official sanction with crude calf lymph, and even there the process was limited to vaccination direct from calf to arm, all lymph *stored* for distribution being glycerinated calf lymph"

Again, "The use of glycerinated calf lymph has become general throughout the German Empire"

Again, "Lymph obtained from these various sources and used from seven to thirty days after collection gives an insertion success of from 92 to 100 per cent"

These gentlemen are emphatic in their endorsement of this form of vaccine and recommend its adoption by the English Government, since in England at the present time arm-to arm vaccinations are still largely in vogue They also suggest, "That the Board's Animal Vaccine Station should be reorganized, both as regards construction and administration *Notably*, will it be requisite that it should include a properly equipped laboratory under the direct supervision of a bacteriologic expert"

Now, assuming that the foregoing conclusions are correct, and that they are correct can not be successfully contradicted, we are allowed no other alternative than to condemn the use of vaccine crusts, quills, points, etc, or any other form of virus which has not been subjected to the purifying effects of glycerin or some similar agent And now, a few words as to the methods of vaccination On the Continent, a number of insertions are recommended, a small amount of the fluid is dropped on the skin in from three to five places and a sharp pointed lancet thrust once through the epidermis at each point desired to be inoculated This puncture should be in an oblique direction and should extend only through the skin In Paris the lancet is charged with the lymph before the insertion The theory for the number of insertions seems to be, that the vaccination more nearly approaches the point of saturation from multiple vesicles than from a single vesicle This method is also recommended in this country by Dr Hardaway of St Louis, who suggests not less than five insertions one half inch apart Dr Hewett of Minnesota modifies this by using a clean needle and making five pricks just deep enough to start the blood and about one inch apart "Then with the same needle charged with the virus, gently prick it into each wound carefully" His opinion is that at least four perfect vesicles are necessary to protection

The general method in this country is to use the single scarification about the insertion of the deltoid and carefully rub in the virus I am inclined to prefer the insertion method when using glycerinated lymph, since it is difficult to get the lymph to "dry," and many practitioners object to the time necessary for scarification to become "sealed up," and there can be no doubt that careless manipulation is more liable to result in contamination in this than the insertion method

It should be scarcely necessary for me to mention the necessity for cleanliness in the operation of vaccination, yet I am sure that many physicians are negligent in this respect, and it is more than probable that many of the bad results blamed on the lymph are due to faulty technic or slovenly methods of inoculation It is probably this fact that suggested subcutaneous inoculation to Dr Sternberg when he writes as follows

"Immunity may be induced by the subcutaneous inoculation of vaccine virus without the development of a vaccine vesicle, and it is probable that the subcutaneous injection of lymph preserved in glycerin would give protection without any of the septic complications so common as a result of vaccination by the usual method"

The same fact was also noticed by Dr Kinyoun in an article published in 1896, in which he says "Subcutaneous inoculations are followed by slight inflammatory reaction, being less when the virus is well diluted There is a slight engorgement of the vessels and occasionally a slight exudation at the point of inoculation, which disappears in a short time There is no lesion accompanying subcutaneous inoculation" This question suggests room for future experimentation in the hope that it may eliminate so many distressing complications of vaccination which annoy the patient and are a source of anxiety to the physician

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THE MEDICAL LAW OF NEW JERSEY

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To comprehend the causes which led to the enactment of the present medical law of New Jersey, and the establishment of the State Board of Medical Examiners, it is necessary to review briefly the history of medical legislation in New Jersey and its effects upon the profession of the State

The Medical Society of New Jersey was organized in 1766, on a voluntary basis, without incorporation or charter In 1772, the Society secured from the Colonial Assembly the passage of

> "An Act to Regulate the Practice of Physic and Surgery within the Colony of New Jersey," which provided "that no person whatsoever shall practice as a Physician or Surgeon, within the Colony of New Jersey, before he shall have first been examined in Physic or Surgery, approved of, and admitted by any two of the Judges of the Supreme Court, for the time being, taking to their Assistance for such Examination such proper Person or Persons, as they in their Discretion shall think fit, for which service the said Judges of the Supreme Court as aforesaid, shall be Entitled to a Fee of twenty shillings, to be paid by the Person applying"

The law also provided that a "Testimonial of Examination and Admission" to practice should be given to each success ful candidate, that the penalty for violating the law should be "five Pounds", that the act should not apply "to any Person bearing His Majesty's Commission and employed in his Service as a Physician or Surgeon," or "to hinder any Person or Persons from bleeding or drawing teeth," or "to skilful Physicians or Surgeons from neighboring Colonies," but 'that every Physician or Surgeon or Mountebank Doctor who shall come into, or travel through this Colony, and erect any Stage or Stages for the sale of Drugs or Medicines of any Kind, shall for every such Offense forfeit and pay the sum of Twenty pounds, Proclamation money "

In 1784, this law was re enacted by the State of New Jersey, its examining provisions were retained, and it remained in force until 1816 In that year, the Medical Society of New Jersey was re incorporated (the first incorporation having been made in 1790), the act of re incorporation authorized the Society to appoint a Board of Censors from its membership, to examine and license all applicants to practice medicine and surgery in this State, and this authority was possessed exclusively by the Society until 1851 In that year, the system of censorship was bitterly complained of by medical colleges in New York and Philadelphia as inimical to public and professional interests, the cry of monopoly was raised, the law was attacked and subsequently amended to permit the graduates of the College of Physicians and Surgeons of New York, the University of the City of New York, the University of Pennsylvania, the Jefferson Medical College and the Medical Department of Pennsylvania College, to obtain licenses from the Medical Society of New Jersey, without examination, upon the presentation of their diplomas to the President of the Society In 1854, the friends of indiscriminate license secured the passage of an Act admitting the graduates of any legally incorporated medical college to practice medicine and surgery in New Jersey, upon filing a copy of their diplomas with the clerk of the county in which they intended to practice This law practically abrogated the examining and licensing power of the State Medical Society and, in 1866, the Society voluntarily surrendered to the State the empty privilege of censorship

From 1772 to 1851, a period of seventy-nine years, the Medical Society of New Jersey stood as the authorized guardian of the portals of the medical profession of the State, from 1854 to 1880, a period of thirty-six years, the only legal requirement for license to practice was the registration of a medical diploma During the latter period, physicians multiplied rapidly, the doctor was despoiled of much of his former dignity, bogus medical colleges flourished, and quacks abounded in every part of this State The need of restrictive measures, governing the practice of medicine, became evident and, in 1880, an Act was passed by the Legislature making the filing of a fraudulent medical diploma a misdemeanor This law, however, was not sufficient to shut out the possessors of such diplomas from active practice, or to stop the work of bogus medical colleges Both the profession and the laity recognized the necessity of a reconstruction of the medical law on the basis of State supervision over the requirements admitting applicants to practice medicine To meet this need, the State Board of Medical Examiners was instituted in 1890, and during the first year of its organization more than three hundred irregular practitioners were driven from the State The next step in medical progress was the enactment of a law in 1892, regulating the practice of midwifery, which provided for the examining and licensing of midwives by the State Board of Medical Examiners, and their registration in the office of the clerk of the county in which they practice In 1894, the medical practice act was revised, under the provisions of which the present State Board of Medical Examiners is now operating

The present medical law of New Jersey provides for a State Board of Medical Examiners, consisting of nine members appointed by the Governor and confirmed by the Senate, and containing five regular physicians, three homeopathic, and one eclectic physician Examinations are held in the following branches of medicine and surgery "(Sec 1) materia medica and therapeutics, (Sec 2) obstetrics and gynecology, (Sec 3) practice of medicine, including diseases of the skin, nose and throat, (Sec 4) surgery, including diseases of the eye, ear and genito-urinary organs, (Sec 5) anatomy, (Sec 6) physiology, (Sec 7) chemistry, (Sec 8) histology, pathology and bacteriology, (Sec 9) hygiene and medical jurisprudence," exclusive of the materia medica and therapeutics of homeopathy and eclecticism, in which the graduates of those systems are examined by their respective representatives on the Board The composition of the Board has proved harmonious and the methods of examination equitable, during the eight years of the Board's existence

The academic requirements of the medical law are those of a common school education, which the State Superintendent of Public Instruction has defined to consist of, "Orthography, arithmetic, English grammar and composition, geography, history of the United States, algebra and physics, or what this Board may consider their equivalent"

In no instance is an applicant permitted to come before the Board for examination unless the requirements above named have been fully met

The medical requirements of the law call for, "A diploma conferring the degree of doctor of medicine from some legally incorporated medical college (which in the opinion of said board was in good standing at time of issuing said diploma) in the United States, or a diploma or license conferring the full right to practice all the branches of medicine and surgery in some foreign country, and have also studied medicine four years, including three courses of lectures in different years in some legally-incorporated American or foreign medical college or colleges prior to the granting of said diploma or foreign license, provided, however, that two courses of medical lectures, both of which shall be either begun or completed within the same calendar year, shall not be considered to satisfy the above requirements"

These requirements are also strictly insisted upon in the case of every applicant for examination

A total average of 75 per cent, or 675 points is necessary "to license a candidate (he or she having otherwise complied with the law) providing that in no one section shall the pecentage be less than 50, in which case, however, the candidate may be granted a second examination immediately upon that Section A candidate having less than 50 points in more than one Section shall be rejected, regardless of the total average"

The examination papers, together with applications for examination are deposited in the State Library at Trenton, after examinations

At the present time, this Board endorses the certificates of examination and license issued by the Medical Council of Pennsylvania and the Board of Regents of New York, together with the applications of those physicians who are now, or have been members of State Examining and Licensing Boards of other States It is the desire of this Board to extend the privilege of endorsement to the licentiates of any State Board whose academic and medical requirements are substantially the same as those of this Board Reciprocity of State medical license is due to the profession The subjecting of medical practitioners of long standing to a technical examination is unnecessary and unjust Reciprocity, however, can not be successfully carried out until a uniform minimum standard of academic and medical requirements is adopted by the different State Examining Boards

This Board has the power to refuse to grant, or to revoke, a medical license for cause The revoking power has not, as yet, been exercised except in the case of midwives Neither is it likely to be exercised unless physicians have been previously convicted of criminal abortion or crimes involving moral turpitude

The law regards as practitioners of medicine those persons who use a medical title, with or without license, or without the use of such title, engage in the customary duties of a medical practitioner, and it is framed to include the practice of mind-healing, faith-cure and similar systems

Violation of a medical law constitutes a misdemeanor, punishable by fine or imprisonment, or both, and it is mandatory upon the district attorney to prosecute such cases when duly brought to his attention

The act does not apply to surgeons of the United State Army, Navy, or Marine-Hospital Corps, while so commissioned, to internes of charitable or municipal hospitals, or registered dentists, or to legally qualified physicians of other States called in consultation, provided that such physicians do not open offices or places for the practice of their profession

The medical law of New Jersey is an admitted necessity and has become popular with the profession throughout the State It has elevated the standards of the profession by its academic and medical requirements, by its unceasing opposition to illegal practitioners, and by its supervision over practitioners of midwifery It meets the demand of the people that the license of the State should guarantee that its possessor is qualified to conserve the public health By its early demand that its medical diploma should only be given after four years of medical study, it has contributed to the extension of the curriculum of medical colleges, and to the organization of other State boards It has proved itself a factor of incalculable benefit to both the profession and the public

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GONORRHEA IN THE MALE

BY J O MALSBURY, M D

PERU IND

Gonorrhea is an acute, specific, infectious, systemic disease, with a local manifestation and systemic reaction I am well aware that this statement is in variance with the almost universal statement of authors, but not so completely so with the clinician and more especially with the patient or victim The victim of this disease, if allowed to tell his story, will give a history in the mild cases, which are but slightly infectious, of an aching in the limbs and back, just at the time of agglutination of the meatus, which, by the way, is a sign that precedes by some twenty-four hours the tingling or itching in the end of the penis, or the pearly drop so often spoken of This acute symptom or aching will subside, usually, with the appearance of the discharge, when the local symptom (discharge) becomes the marked one, in fact the only manifest symptom This is a point to be noted, since in the severe infectious cases, if the discharge be free at the time of severe or pronounced systemic reaction, it will all but cease during such severity, to be re established when the severe symptoms have subsided

This symptom (discharge) has been bombarded from time immemorial, with all sorts of topical applications and injections, and more recently with the bichlorid douche, all of which have had their so-called or supposed cures It is universally admitted that in no other *local* inflammatory condition have efforts proven so uniformly unsuccessful Some would explain this fact with the reasoning that the micro-organisms have already developed, penetrated the epithelial layers and formed colonies in the lymph spaces and connective tissue layers of the mucous membrane so effectually, before local treatment is begun, that no remedy will reach the deeper-seated organisms short of entire destruction of the mucous membrane

The fact of the matter is that the symptom (discharge) is being treated under the guise of removing the cause, *i e*, destroying the micro organisms, which is the sole and *local* cause of the discharge or disease Suppose this to be the case, an ounce of pus would be a conservative estimate of the quantity of discharge thrown off in twenty four hours, this, according to the local idea, must be formed within and *of the penis* by the micro-organisms Now, if such were the case, the average victim would run out of penis long before the admitted time (some twelve to twenty days) for the discharge to even lessen in quantity This discharge is a product of the body, either local or general, and certainly not local in the sense of tissue or cell destruction, for the reasons pointed out above It must, therefore, be a product of the body in general, and gathered up and thrown off through the agency of the blood vessels or lymphatics, or be a product, *per se*, of the blood or lymph, or both, and is kicked out by nature through this particular door (urethra) through which the disturber entered, be that the gonococcus of Neisser or what not The adherents of the local theory of this disease would account for the pus in that it is an ordinary product of a local suppurative inflammation, which is made up of leucocytes which escape from the local blood vessels in consequence of changes wrought in their coats by the local inflammatory process, including débris from broken-down epithelium, etc This is a very fine theory, and would be more acceptable had these same adherents furnished an infallible local remedy, or shown that the phenomena following a poisonous snake bite to be a local inflammation

In the more severe cases we have, in addition to the above symptoms, at about the end of the third week, more pronounced systemic symptoms, oftentimes a chill followed by fever and elevated pulse which, by the way, runs a little high throughout the entire acute attack, even though the temperature be all but normal, which fact shows an element of sepsis There is a loss of appetite, coated tongue, foul breath and a feeling of lassitude together with the local symptoms, in the posterior urethra, of pain and tenesmus, supplemented by frequent urination and oftentimes great distress during voidance of urine The excretion of pus here will not be so abundant and that from the posterior urethra, back of the cut off muscle or external sphincter, will be thrown into the bladder and passed off with the urine Here we have systemic symptoms almost as pronounced as in diphtheria or scarlet fever, with local treatment as ineffectual as in the above diseases And yet, we are taught that we are dealing with a local disease, as the old writers taught diphtheria to be, but which is now universally recognized to be a systemic affection, with all but, if not quite, a specific (antoxin) for its cure

We have yet another type of gonorrheal infection, which might very properly be termed gonorrheal septicemia This condition is peculiar to the third or fourth week of the infection and but rarely, if ever, occurs at the acute onset of the disease This sepsis is announced, as most septic troubles, by a pronounced chill followed by fever, 103 to 105 degrees F, and in fatal cases 108 degrees F has been recorded This temperature is of an intermittent character dropping to about normal and rising to the high point once in twenty-four hours This peculiar temperature points to a multiplication of the specific element up to the point of an explosion, or ovulation, if you please, the temperature rising and falling with the above phenomena

Now, whether all of these conditions and shades of the same disease are due to one and the same cause or specific element, no one is able to answer positively Some attribute it to a mixed infection, while others think it due to a susceptible system As for myself, I am sure that we are called upon to meet these different shades of the same disease, the same as we are in diphtheria, scarlet fever, typhoid fever, etc, let the cause be what it may It is very generally admitted that paralysis is sometimes a sequel of diphtheria, and nephritis of scarlet fever This, to be sure, is in consequence of the systemic character of the diseases A species of rheumatism is admitted to be a sequel of gonorrhea Then is it not reasonable to suppose, from this fact alone, that gonorrhea is a systemic disease in the same sense as diphtheria and scarlet fever? When we point out the distinction between infection and inflammation, we have an explanation of the chronic cases of gonorrhea Infection is a condition in which foreign media of irritation have gained access to the body either mechanically or by means of their products disturb its functions These media are capable of being transmitted to other individuals, in most, if not in all cases, the invading irritant is of bacterial origin The organisms, unless arrested, are prone to multiply, to spread into new territory and to transmit their toxic products to the general circulation This, in my opinion, is exactly what occurs in gonorrhea infection The clinical evidence is all conclusive of this fact, and if we were in need of further proof, we have only to look into the therapy applied to this disease for the past centuries and up to the present time The local territory invaded or irritated by the organisms and their toxins becomes a center to which leucocytes in large numbers rapidly migrate, and in this way the process known as seroplastic infiltration is established By this infiltration, a limiting wall is formed around the infected space The formation of the limiting wall gives rise to heat, redness, pain and swelling, the phenomena of inflammation In this view of the facts, inflammation is not really the disease, but effort to limit the disease This wall confines the infective process to narrow limits and may protect the general system against the further infection after the initial poison has run its course, that is to say, nature has generated an antitoxin which overcomes the offending element (toxin) and the disease, so far as the general system is concerned, is at an end We have now to consider the functional conditions of the different organs, as the liver, spleen, etc, especially where there has been severe systemic infection, while the pathologic changes will apply more especially to the urethral canal and appendages

This brings us to so-called chronic gonorrhea or gleet, and the above explains the phenomena of the same, which is in reality only the resultant damage done the local tissue furnishing a lurking place for the remaining micro organisms, but at the same time they are fenced off from the general system by the plastic exudate as a result of the inflammation, as has been described, but are ever ready for a new field

Treatment in the acute stage of this disease must be largely expectant, since we have no specific to be given internally or applied locally, which will cure the disease Our efforts then, in the present light of the etiology and treatment of this disease, will be confined largely to prophylaxis, keeping the phenomena of the disease in the middle of the road, so to speak, and preventing complications until the race is finished, or at least slowed up sufficiently to begin the repair of damages

To strike a direct blow at the phenomena of this disease with the idea of destroying it *per se*, has proven to be a failure with the past and present therapy, as is proven by clinical facts, notwithstanding the comparatively recent developments in the etiology of this disease and therapy applied with special reference to this etiology Even though good results have been reported, the tide is beginning to ebb and we have only to wait for another swell

During, then, the acute stage, which will usually be from twelve to twenty days, we can not do better than to keep the parts thoroughly cleansed, the patient quiet as possible, a glass of Hunyadi water each morning, and a hot hip bath including the genitals twice or thrice daily, remaining in the water from twenty to thirty minutes This is to be continued until the discharge becomes lessened and at the same time thinner, at which time balsam copaiba and oil of cubebs should be given as freely as the stomach will admit of, and at the same time an astringent injection should be used, preferably perhaps of an antiseptic character, as nitrate of silver, bichlorid of mercury, etc I prefer, however, for this subacute stage, an injection of acetate of zinc, from two to sixteen grains to the ounce of water, or one dram of subnitrate of bismuth to one ounce of equal parts of water and glycerin The injection to be repeated, at first following each urination and finally to be used each evening for a week or ten days after the complete disappearance of the discharge This treatment applies to cases where the local symptoms are confined to the anterior urethra The involvement of the posterior urethra is suggestive of a new infection of the general system, since it invariably occurs at about the end of the third week, the universally recognized time for the acute infection to begin to subside, and too, the symptoms (systemic) are the same as at the acute infection, only more marked I am led to believe that these marked symptoms and severity of attack are due, at least in a measure, for the want of a free exit for the pus, and in consequence more of its elements are retained in the blood to be thrown off through other channels The same phenomena, in a slighter degree, occur when a strong astringent injection is used in the acute stage of the disease, which inhibits the discharge It is a notable fact, also, that the period of decline here corresponds very closely to that of the initial infection, showing a probable repetition

This extension or new infection, as the case may be, is important not only on account of the painful symptoms to which it will usually give rise, but also on account of the fact that, by greatly increasing the extent of the local inflammation, it renders complete recovery much more uncertain and remote, and by its proximity to other important organs greatly enhances the probability of a further extension of the inflammation to the bladder, seminal vesicles and testicles And too, the more local surface involved increases the local inflammation and in consequence the plastic exudate, which is slow to be absorbed, and hence the great danger of permanent pathologic conditions In severe cases of this character, absolute rest in bed must be enforced As a diuretic for such cases, secure the daily consumption of from two to five quarts of plain water, and to this may be added boric acid or salol in doses of five to ten grains of each, four or five times daily For the pain and tenesmus, rectal suppositories of morphia and belladonna will be found efficient After the acute symptoms have subsided, copaiba and cubebs will be indicated until all acute inflammation has completely disappeared, then, if there yet remain any pus formation in this region, which will be ascertained by an examination of the urine, a deep injection of a solution of nitrate of silver, 1 to 8000, will be indicated

A catheter is to be introduced just through the external sphincter and two or three ounces of the solution thrown in slowly, with any suitable syringe, which will pass into the bladder after medicating the posterior urethra The solution is to be retained for a few minutes, then passed out through the urethra, which will medicate the entire urethral tract For chronic cases of the posterior urethra, the same procedure may be carried out, gradually increasing the strength of the solution In stubborn cases of this character, of which there are many, the use of sounds will lend assistance in breaking up adhesions and causing absorption of the plastic exudate

Where the posterior urethra alone is involved, which is usually the case in these especially stubborn cases, suppositories introduced, of an astringent or even caustic character, will often give good results Instillation of a few drops of a solution of nitrate of silver of from one to five grains to the ounce of water, just following the complete stretching of the posterior urethra with the sounds, will often prove effectual I am ready to admit that in these chronic cases as well as the subacute, local medication alone is effective Not because the remedies used destroy the specific element *per se*, but from their local effect in stimulating the tissue to a healthy action and thus bringing about the normal vitality, which, after all, is probably the prime factor in eradicating disease Since it is always an astringent that yields good results in these cases, it would be natural to surmise that owing to the relaxed and softened condition of the coats of the local blood vessels, there is an escape of serum, which, through its dissolving or softening effect will not allow the epithelium to reproduce The astringent supplies this deficiency, puts on a splint so to speak, checks this exudation and at the same time assists in restoring the coats of the vessels In this way, then, the epithelium is reproduced, which shuts off the lurking place of the specific element, which must then move on, rather than be destroyed by the topical applications For this reason I am not an advocate of strong, or weak for that matter, antiseptic remedies, further than their astringency For the same reason we are not confined to any one remedy, but the principles of astringency, which may be obtained from many and various remedies, which fact probably accounts for the great number of remedies employed in the treatment of this disease, by as many different clinicians, all apparently with good results when applied in the proper manner, and more especially, at the *proper time*, which, as I believe, is never during the acute stage of the disease, for the reasons pointed out above. The action of the copaiba and cubebs is astringency and is of no avail during the immediate acute stage, but on the other hand will increase constitutional symptoms when used at this acute stage for the same reason pointed out as to the astringent injection at this period, that of inhibiting the discharge and causing the elements of the same to tarry longer in the system and finally be cast off through other channels

The great value in these two remedies lies in their mode of application, *through the urine*, thereby avoiding all instrumental irritation, which is no small factor, especially where the posterior urethra is involved. If the case is chronic and of long standing, which is equivalent to extensive exudate, these remedies must be displaced by astringents which will penetrate deeper, and just here is where we get the good effect from the use of the sound preceding the injection or instillation, the tissue is rendered more susceptible to the remedy, hence a weaker solution may be used with better effect than a stronger one and with less pain, which is no small item to the patient, and many times financially to the physician

It matters not in what portion of the urethral canal the disease may be located, all mechanical obstacles must first be removed or no form of medication will be successful If located in the membraneous or prostatic portion, gradual dilatation with sounds will give the best results When there are strictures of the pendulous portion, division is perhaps the best method of removing them

In gonorrheal septicemia treatment which applies to sepsis in general seems to offer the best results, such as limiting the absorption of the toxins, if such can be the case It is probable, however, that in gonorrheal septicemia there is but one time of absorption and that is at the onset, after which there is a septic element in the blood which multiplies and explodes, as has been described The object here, then, will be to use a remedy or remedies which will destroy the septic element or its power to multiply, and to bolster up the blood so as to give it the best possible resistance to the invading septic element For the first part, quinin at a single dose of 20 to 30 grains is given some five or eight hours preceding the chill, this is to be repeated as often as the chill repeats For the second part, tincture of the chlorid of iron, solution of chlorid of arsenic, and bichlorid of mercury seem to meet the requirements better than any other combination

A word as to the irrigation method, with bichlorid solution or any other supposed abortifacient, of aborting or treating gonorrhea I have given the bichlorid method careful trial in six consecutive cases and in each and every case there developed about the end of the third week posterior symptoms, and I have good reason to believe that this posterior extension or new infection, if you please, was due, at least in part, to the irrigating solution, since of six other cases treated about the same time, after the method pointed out above, there was only one case in which extension to the posterior urethra took place, and this was probably due to inordinate exercise—that of cycling This irrigation brings about congestion and in consequence weakened epithelium, which is probably further softened by the too free use of water and rendered less resistant, and at the same time the infectious element is carried back from the anterior urethra and extension or new infection, as the case may be, takes place, which otherwise would probably not have occurred

One case in particular had been a victim of this disease three times preceding this last attack, each preceding time the local symptoms confined to the anterior urethra, and each time making a complete recovery in from four to six weeks, with the plan of treatment above described in such cases In view of his last experience, it is safe to say that there is one person who will never again submit to this irrigation method of treatment The discharge was not so abundant in these cases, in fact, at times it would all but disappear, but at the same time the constitutional symptoms became more marked, the patient feeling and looking badly, with an elevated pulse and temperature

ASSOCIATION NEWS

American Medical Association

Official Minutes of the General Sessions of the Forty ninth Annual Meeting, held in Denver, Colo , June 7, 8, 9 and 10, 1898

(*Concluded from page 95*)

JUNE 10—FOURTH GENERAL SESSION

The Association was called to order at 11 A M by the Fourth Vice President, Dr Happel

The Secretary read the minutes of the previous general Session, at the conclusion of which Dr I N Love of St Louis, said The minutes that have been read apply to a very important part of our work, and very little is said about the report of the Business Committee of yesterday In the report of the Business Committee of yesterday there were fourteen different matters, if I remember rightly, that were considered, and most of them were quite important We know that when these minutes are accepted and printed they are the action of the Association, and it seems to me, Mr Chairman, there were several items concerning which the minutes are not clear They are not distinct, not definite I have forgotten the exact wording of the resolution offered by Dr Bailey, which pertained to the appointment of a General Secretary, but the motion I offered in regard to it was that, inasmuch as the resolution involved the appropriation of money, it be referred to the Board of Trustees, which is the disbursing organization of the Association

Secretary Atkinson—I have no motion in writing pertaining to that report.

Dr Love—I move, Mr President, that the minutes be corrected so as to read, "*Resolved* That inasmuch as the resolution of Dr Bailey pertained to the disbursement of money, that it be referred to the Board of Trustees for consideration, and report back to this Association one year hence "

I am surprised that the Secretary did not take down the substance of the motion made by me at a preceding General Session Seconded by Dr Ferguson

Dr H D Didama—I would like to ask whether there was any record made of such a motion by the stenographer We suppose that the auricular appendages of the stenographer are sufficiently acute to catch all of these things, and I would like to know if the stenographer has any record of it

(Secretary Atkinson accidentally missed a line or two relative to the action taken on Dr Bailey's resolution in reading the minutes, and while the stenographer was searching his short hand notes, Dr Atkinson discovered his omission, and then read the substance of Dr Love's motion)

The President—It is my recollection that the motion made by Dr Love was that, inasmuch as the resolution involved the appropriation of money, it was referred to the Board of Trustees The Chair can not state, however, whether it was in the form of a well defined motion or not This matter brings us to the point that if the stenographer represents the JOURNAL or the Association in his work, and is paid by the JOURNAL, he should furnish every morning a typewritten copy of the minutes, *verbatim et literatim*, to the Association The members have a perfect right to correct the minutes If the minutes are thought by the majority of members present to be incorrect, not as full as they ought to be—if they are not a true exponent of the will of the Association, they should be corrected

After Dr Atkinson had read his minutes pertaining to the motion of Dr Love, Dr Love said I wish to say a few words, Mr Chairman, from the business standpoint of this Association Important resolutions and important actions taken by this body have for years not appeared in the official minutes We have had from year to year just such evidences of secretarial inefficiency—absolutely—and I say now, without fear of contradiction, that the action on the resolution or motion offered by me was not read by Dr Atkinson He overlooked it. No man should attempt to read the minutes of an important Association like this from illy prepared notes And, Mr Chairman, in all kindness I will say, that I am surprised at the fact that in the reading of the report of the Business Committee and the action taken upon the particular section under consideration, we have very imperfect records Dr Atkinson has read from his notes that which he did not read in the beginning

Dr Atkinson—I was under the impression that I read the paragraph mentioned by Dr Love, but it seems I did not do so I wish to say in this connection that if the Secretary of the Business Committee had not carried off the resolutions that were introduced at the previous session, these mistakes would not have occurred

Dr H D Didama of Syracuse—I would like to inquire if it is the practice of the Business Committee, after reading their report, to carry it off? It seems to me it should have been handed to the Secretary Our Secretary Dr Atkinson, has been placed at a great disadvantage in the matter of his minutes, owing to the fact that the Secretary of the Business Committee has carried off the reports which should be in his possession

Dr I N Love—In all kindness I desire to say, that I gave up the Loop trip simply for the reason that I felt that this was the most important meeting of the Association, inasmuch as action has to be taken upon the minutes as to the report of the Business Committee of yesterday Time and again important reports have been made during the closing moments of the Association and hastily imperfect minutes of important records have been presented and allowed to go by carelessly and indefinitely To show you gentlemen, that I am not springing any new thought I will say that at the Baltimore meeting and at numerous other meetings, there have been severe criticisms passed upon the Secretary Dr William Osler made a statement at Baltimore, as representing the local Committee of Arrangements there, which severely reflected upon the Secretary of this Association Unfortunately, he made the criticism in a very severe manner But I understand that important resolutions presented at previous meetings of the Association have been left out of the printed records One important resolution, an amendment to the Constitution, which affected the position of the Permanent Secretary, was left out of the minutes by the Secretary I wish to say, in all kindness, that the office of Secretary is not a sentimental office The office of Secretary is the business end of the Association, and I would advise the Secretary hereafter to see to it that the stenographer, paid by the Association, shall take a record of every point made regarding reports

Dr J W Graham, of Denver—Every one knows that it is a very difficult thing for a secretary who [illegible] a shor[illegible] writer to take notes of all business [illegible] cted [illegible] general sessions of an Association like [illegible] should expect our Secretary to do it No man can do it In this age we have specialists for this kind of work, and it seems to me that the stenographer should have his report prepared at all times, ready to be read It seems to me that the stenographer can clear up these matters by reading his notes, and that we should look to him for a full report instead of to the Secretary

(The stenographer told the Chair that he was ready at any time to read his shorthand notes when called upon to do so)

Dr Atkinson—There would be no trouble in keeping the minutes of the Association, if the members wrote out their resolutions and handed them to me (Applause) My friend Dr Love, refers to an omission at the Baltimore meeting, and I will say that it was caused by the neglect of the person who offered the amendment to present it to me in writing, and I notified the editor of the Journal of this fact when I sent my minutes to him to be printed in the Journal I wish to say in defense of myself that I have always been in the habit of keeping in regular order every motion or resolution that was offered and handed to me in writing When it comes to making a stenographic report of the amendments introduced on the floor, it is another thing, and I hope from this time forward the President will demand, before any action is taken upon any resolution or motion, that it shall be presented in writing to the Secretary (Applause)

Dr Love—I make the point, Mr Chairman, that the Secretary has been in the service of the Association for twenty five years, and that it is his duty, at all times, to assist the Chair I do not believe a single motion pertaining to any one of the Sections contained in the report of the Business Committee was called for in writing I agree with the Secretary that every resolution pertaining to anything should be put in writing It is the duty of the Secretary to offer suggestions to the Chair, because we are here for executive work Those gentlemen who have lent their sympathies this morning with the Secretary have very little knowledge of the records of the past I am not alone in making this statement. I am willing to be criticised, if necessary, but those who know me know that I would rather remove my right hand than to be unjust to any man (Applause)

(No action was taken on Dr Love's motion)

The President—The minutes are a little indefinite in regard to the action taken by the Business Committee on the suggestions contained in the President's address, and I will ask the stenographer to read his shorthand notes on that point

The stenographer then read part of his notes of the report of the Business Committee on the President's address, as follows

"While your Committee is duly in sympathy with the recommendation of the President as to the admission of members to the Association under the conditions mentioned, still under the existing laws of the Association it does not feel competent to recommend its adoption "

The President—The minutes are now clear on that point.

Dr W L Wills of California, offered the following amendment to the Constitution

Article IV—Officers Amend to read "The following officers, President, four Vice presidents, Treasurer, Librarian, Secretary, Assistant Secretary and Chairman of the Committee of Arrangements shall be nominated by a special committee of one member from each State represented at the meeting, and shall be elected annually by the vote of a joint ticket, and shall hold office until their successors are elected " (Lies over for one year)

Dr T J Happel of Trenton, Tenn , offered the following

Resolved, That an exact time be fixed at future meetings of the Association by the Committee of Arrangements for the different General Addresses to be delivered before the American Medical Association, and that when that hour arrives all business must be laid aside until the Addresses have been finished

Seconded by Dr Love and carried

Dr C Lester Hall of Kansas City, Mo , offered the following

Resolved, That it shall be the duty of the Permanent Secretary to furnish the incoming Secretaries of Sections with a list of the names of those attending the various Sections each year Seconded

The Secretary—In moving the adoption of this motion I would like to make a remark I would say, Mr Chairman, that for a number of years I have sent a note to the Secretary of each Section asking him to keep a registration book for the purpose of containing the names of those who attended the Section, and this year I have had two Sections that have agreed to do this and have promised to turn over to me the registration book. I shall, in accordance with this resolution, if adopted, do as I have done before, write a note to the Secretary of each Section asking that he keep a registration book.

Dr Love, speaking to the resolution offered by Dr Hall—I would suggest that every member of the Association when he registers place the name of the Section which he will attend and in which he will vote for Section officers It seems to me if a record of the registration is kept by the Secretary of the General Sessions it would very easily enable him to furnish, as requested by the resolution, a complete list to the incoming Secretaries of all registered members in each Section We all know that secretarial duties are burdensome, that they require experience and special adaptation The Secretaries of the Sections are oftentimes selected hastily, with a view, possibly, to their prominence as practitioners and workers, knowing little about their secretarial positions While it is difficult to secure efficient secretarial work from the different Sections, it seems to me it would be the easiest thing in the world for the Permanent Secretary to furnish the information asked for in the resolution that has been read That is all he needs to do

The resolution as offered was adopted

The following are the officers of the various Sections for the ensuing year

State Medicine—Arthur R Reynolds, Chicago, president; W P Munn, Denver, secretary

Stomatology—George V I Brown, Milwaukee, president, Eugene S Talbot, Chicago, secretary

Cutaneous Medicine and Surgery—W T Corlett, Cleveland, president, J M Blaine, Denver, secretary

Diseases of Children—Henry E Tuley, Louisville, president; J L Booker, St Louis, secretary

Surgery and Anatomy—W J Mayo, Rochester, Minn , president, M L Harris, Chicago, secretary

Physiology and Dietetics—J Weir, Jr , Owensboro, Ky , president, Lee Kahn, Leadville secretary.

Obstetrics and Diseases of Women—A H Cordier, Kansas City, president, W D Haggard, Jr , Nashville, secretary

Practice of Medicine—Frank Billings, Chicago, president, Carroll A Edson, Denver, secretary

Ophthalmology—Casey A Wood, Chicago, president, A H Williams, Boston, secretary

Materia Medica, Pharmacy and Jurisprudence—T H. Stucky, Louisville, president, Leon L Solomon, Louisville, secretary

Laryngology and Otology—P R Holmes, Cincinnati, president, Emanuel Mayer New York, secretary

Dr X C Scott of Cleveland, Ohio, read the following report of the Judicial Council

REPORT OF THE JUDICIAL COUNCIL.

Your Council reports on matters referred to it, as follows

They have ordered their Secretary to send all documents pertaining to the standing of the Santa Clara County Medical Society and Santa Clara County Medical Association, of Santa Clara County, California, to the State Medical Society of the State of California for adjudication and to report their finding to this Association

The Secretary of the Council has been instructed to forward to the State Medical Society of Colorado, the charges and protest preferred by H Angus Sims against H W Kirby and H V Towaner of Cripple Creek, Colo , for investigation and adjudication

In regard to the matter of appeal of W F Barclay of Pittsburg, Pa , the Secretary of your Council has been instructed to inquire of the State Medical Society of Pennsylvania why they have made no answer to the communication which was sent by your Council to said State Medical Society of Pennsylvania immediately after the annual meeting of 1897

Your Council requests and insists that all communications, documents or papers received by the Permanent Secretary, pertaining to business or matters before or to be before the Council, shall be forwarded by him, upon their receipt, to the Secretary of the Judicial Council, and that such communications, documents or papers shall not be delivered or forwarded to any other member of the Judicial Council

H D Didama, President.
X C Scott, Secretary

On motion the report was adopted

Dr I N Love—The Board of Trustees have presented the following recommendation That the following Committee on Transportation be appointed to correspond with railroads as to rates, and make the best possible arrangements for the Columbus meeting The Committee recommends Dr H. L E Johnson of Washington D C , Dr I N Love of St. Louis, Mo , Dr Charles A L. Reed, of Cincinnati Ohio, Dr X. C Scott of Cleveland, Ohio, Dr Starling Loving of Columbus, Ohio, and Dr E. D Ferguson of Troy, N Y

On motion, the recommendation of the Board of Trustees was adopted

Dr Mayer extended an invitation to the Association to visit Cripple Creek, and to become the guests of the medical society of that district

On motion of Dr Love, the invitation was accepted with thanks and the keenest appreciation

Dr X C Scott offered the following resolution, which was adopted

Resolved, That the Permanent Secretary be required to bring the minutes of the Association of previous years so that they may be referred to if necessary

Dr I N Love offered the following

Resolved, That the Permanent Secretary be required to have the stenographic report of the proceedings transcribed and ready for consideration and correction, if need be, each day before being adopted

Seconded and carried

The following resolution was offered and carried

Resolved, That the Secretary be instructed to furnish a copy of the Constitution and By Laws and Code of Ethics to the proper authorities who have the preparation of the program, with instructions to print the same in the regular official program each year hereafter

Dr Henry O Marcy of Boston, offered the following resolution As we are near the close of the session I rise to a question of privilege We have all enjoyed the hospitalities of Denver in an exceptional way For twenty three years I have been a constant attendant upon the meetings of the Association, we have profited by the hospitalities and by the assistance of the various local committees in each of the different cities where we have held our meetings Wherever we have met one city has tried to rival another, until we have been led to think that there was no end to hospitality I am quite sure I voice the universal expression of opinion of the Association when I say that I have not heard anything else save that of *éclat* concerning the manner in which the profession and citizens of Denver have so royally received and magnificently entertained us We have each and all of us had a rare opportunity of witnessing and of personally enjoying and profiting by the hospitalities of the entire city First of all, we have to thank the Chairman of the local Committee of Arrangements Dr J W Graham, who has been such an efficient chieftain and to him personally would I ask that this Association extend its thanks Then the various associations and corporations of the city have each vied with the other in doing everything possible to contribute to our comfort, pleasure and convenience We also wish to express our thanks to the railroads for reduced rates, the public press for reports of the proceedings of our sessions, and the various associations, including the ladies, who have done so much to contribute to our comfort and happiness We wish to return thanks to the citizens of Denver for the hospitality which we have received at their hands, and for the extraordinarily agreeable way in which they have made our visit pleasant, and for the delightful reminiscences which will ever come back in memory of the hours we have spent here during the last week

Dr Henry P Newman of Chicago—In rising to second the resolutions offered by Dr Marcy, I feel that every member of the Association will heartily second what he has said Having come in contact with the Committee of Arrangements in a business way, which many of you have not, I wish personally to testify to the efficient work of all of the different departments, and I feel that we owe the local Committee of Arrangements our heartfelt thanks, who have contributed so much to the success of the meeting held in this city

Dr I N Love of St Louis Mo —As a member of the Board of Trustees, I know I voice the sentiments of the entire Board when I endorse and emphasize all that has been said so eloquently and sweetly by Dr Marcy At the same time I wish to particularly emphasize our appreciation of and for the gentle, graceful and efficient manner in which the Chairman of the Committee of Arrangements, Dr Graham, has conducted the work It is rare, indeed, that a man is possessed of such executive ability as he has displayed, the ability to select the right man and the right set of men to do the work as well as it has been done here I appreciate from an editorial standpoint the fact that the Chairman of the local Committee of Arrangement has demonstrated that he is superb in the use of the scissors in being able to clip from the great mass of the profession the right men in the right way, and place them with his paste at the right place, and this particular man has never been absent from his post—never (Applause)

Dr J W Graham of Denver—I ask you to include in your vote of thanks the entire profession of Denver, and I wish to say that I do not think there is a better body of men on earth to co operate with in such work

The resolutions of thanks were then unanimously adopted by a rising vote

Dr X C Scott of Cleveland, Ohio, offered the following

Resolved, That we extend a vote of thanks to the various traffic associations and railroads which have granted the concessions asked for by this Association

Seconded and unanimously carried

Dr I N Love—I wish to offer the following

Resolved, That a special vote of thanks be given to the Union Pacific, Texas and Gulf, Denver and Rio Grande Railways, etc , for the most extraordinarily liberal courtesies they have extended to this Association

Seconded and unanimously carried

The President (Dr T J Happel)—The Chair would state that the idea of presiding over the General Sessions of the Association before arriving here had not entered his head, that it has been done on the spur of the moment, and if there have been any errors in the rulings of the Chair they are errors of the head and not of the heart Everything was done with an effort to promote and expedite the business of the AMERICAN MEDICAL ASSOCIATION I think the members will bear me out in the statement that the business that was transacted in the Association yesterday was for the purpose, if possible, of settling a matter, and that whatever rulings the Chair made they were not made for the purpose of wounding the feelings of anyone connected with the matter I tried to do equal justice to all parties connected with the transaction (Applause) The Chair desires to extend to the Association his thanks for the order which was observed during the administration of the affairs of the Association, and to state he has never been in any organization which has behaved in a more orderly, respectful and respectable manner (Loud applause)

Dr Happel then presented Dr Mathews in the following words As Vice President of the AMERICAN MEDICAL ASSOCIATION, and of the administration which is just passing out, I take great pleasure in presenting to you the incoming President for the year 1898-9, Dr Joseph M Mathews of the city of Louisville, Ky

Dr Mathews was very warmly received He spoke as follows

Mr President and Gentlemen of the Convention—Words fail me in trying to attempt to thank this Association for the honor they have conferred upon me For nearly twenty years I have been trying in a humble way to serve this body I have sat at the feet of the great men of this profession, and in accepting this distinguished honor from this great body, when I reflect back upon the days when this Chair was occupied by that venerable man, Dr N S Davis, and my illustrious predecessor, Dr Sternberg, I must say that I feel great diffidence in attempting to fill this Chair Yesterday, as I looked over this great body and reflected that during the twenty years that I have been identified with the Association hundreds that I knew then are now dead and gone, it made my heart sad One of the most pleasant things connected with the membership of this great body is that we make friends, lasting friends, friends that will serve us always, and in the interim between our sessions our hearts go back to our meetings, because we feel the warmth of their influence and know that their hearts went out to us, and it is my hope that not a single member will drop out of our number between now and the next meeting It is sad to think that each year some one of our many friends has been taken away, and so the Convention goes on forever I believe the time is near at hand when it will be recognized that if a man in the medical profession of the United States is not a member of the AMERICAN MEDICAL ASSOCIATION he is not a reputable doctor (Applause) I believe that each year will add to our ranks many noble men, and I want to ask the indulgence of the Association always for the younger men, that they may be cared for, that they may be taken into the embrace of the Association, that they may be made to feel at home always By so doing we make better men of them, we make better doctors of them, and let us see to it that the membership be added to from the younger ranks of the profession (Applause) Gentlemen, during this year and the coming year I shall try to do my duty I hope some one will offer a resolution thanking the presiding officer (Dr Happel) for the efficient manner in which he has conducted the deliberations of this body We are deeply obligated to him Please, gentlemen, accept my hearty and sincere thanks for the distinguished honor that you have conferred upon me (Loud applause)

Dr I N Love—I move you, sir that a special vote of thanks be given to Dr T J Happel of Tennessee for the superb and skilful manner in which he has conducted the deliberations of this Association, and for the thoughtful care with which he has looked at every detail of the business management of our sessions The efficient manner in which he has presided ought to be an example to every one who follows in the Chair (Applause) We also wish to thank [illegible] on of In anapolis, for his grace and skill as a presiding officer, and especially to thank Dr Jayne, the local Assistant Secretary

Seconded and unanimously carried

Dr J W Graham of Denver—I want to add a little more emphasis to the vote of thanks extended to Dr W A Jayne of this city, the Assistant Secretary It is rare to find a man who has filled the office so capably and so acceptably as he has done He has been my right arm throughout the year, and has made it possible to make the meeting a great success (Applause)

There being no further business to transact, on motion, the Association adjourned to meet in Columbus, Ohio, the first Tuesday in June, 1899

SOCIETY PROCEEDINGS

Chicago Medical Society

The annual meeting of the Society was held in the new Society rooms of the Stewart Building, Wednesday evening, June 29, 1898, with the President Dr Fernand Henrotin, in the Chair

The Secretary read the minutes of the previous meeting, which were approved

The Chairman of the Membership Committee, Dr J H Stowell, reported favorably upon the following applications, and they were elected Drs D H R Patton, J E Woodbridge, W E T Michelet, C C Hunt, F E Bigelow, S A Mathews, F A Goetz, J F H Lugg, A C Broell, Josephine A Jackson, Emil Amberg and Walter L Vercoe

The next thing in order was the report of the Secretary, which was read by Dr Arthur R Edwards

The report stated that from 1888 to 1897 there had been 615 additions to the Society, and that during the past year there had been an increase in membership of 234 Of this number two failed to qualify, three were suspended for non payment of dues, eleven died and ten resigned The Society had now a membership of 902, including those elected at this meeting

The average attendance for the thirty nine meetings during the year was 110

On motion of Dr Harris the report was accepted

The Treasurer's report was read by Dr S C Plummer, showing a healthy condition of the Treasury

On motion this report was received and referred to the Auditing Committee

Dr Archibald Church made a verbal report as editor of the Society, stating that the character of the papers that had passed through his hands during the year as compared with those of previous years was very much superior Not only had there been a large increase in the amount of work done by the Society, but the individual character and tone of the papers from a scientific standpoint had been distinctly elevated as compared with previous years Nearly all of the papers had been published in the *Chicago Medical Recorder*, and many of them simultaneously in other medical journals

On motion of Dr Ridlon, the report of the editor was accepted

Dr J H Stowell, Chairman of the Membership Committee, stated that during the past year the work of the Committee had devolved upon Dr Newman and himself, owing to the long sickness and finally the death of Dr Paoli The Committee had endeavored during this time to do its work conscientiously and faithfully It had corresponded in a great many cases in regard to applicants to find out their standing, and while the Committtee did not expect they had kept every man out that ought to be kept out, still it had tried to do so

Dr E J Doering reported, on behalf of the Publication Committee, that for the ensuing year the *Chicago Medical Recorder*, the official organ of the Society, would not be able to offer any prizes on account of the increased expense of publishing the proceedings of the Society, this expense during the past year amounting to about $1000

The Committee awarded Dr M. Herzog a prize of $100 for his paper on "Superfetation in the Human Race" And also a prize of $100 to Dr Arthur D Bevan for his contribution on "Surgery of the Gall Bladder"

Dr Graham, a member of the Library Committee said the Committee had held several meetings and conferences with the authorities of the Newberry Library during the year The medical department consisted of 30,303 bound volumes, 25 000 pamphlets, and there were continually on file 450 different medical periodicals The library was now more complete than it had ever been, and the authorities promised to make further additions in the near future, especially in the nature of reference books The library, however lacked odd volumes or numbers of important periodicals The trustees of the library would pay more attention to increasing its usefulness if the members of the profession in the city and surrounding country took more interest in it The Committee and library authorities believe that much good could be accomplished by members of the profession corresponding direct with the Newberry Library Their communications would receive prompt attention, and abstracts of medical journal articles would be furnished physicians at a small remuneration The Committee recommends that a notice or announcement of this be published in the Journal of the American Medical Association.

On motion, the report was accepted

The Necrologist, Dr Herman Peterson, reported the deaths of ten members during the year On motion the report was accepted and placed on file

President Henrotin then delivered his address, in which he spoke of the establishment of permanent quarters for the Society, believing that no mistake had been made by inaugurating this movement, and in order to do this it was necessary to secure funds The manner of securing these funds was outlined He directed attention to the renewed interest taken in the work of the Society, the improvement in its quality, and the proper dissemination of the material brought before it

The Society proceeded to the election of officers, with the following result President, Arthur Dean Bevan, first vice president, J C Hoag, second vice president, Henry B Favill, secretary, Arthur R. Edwards, treasurer, S. C Plummer, necrologist, Herman Peterson Board of Trustees Drs James B Herrick Frank Billings, and F Henrotin, for three years Drs N S Davis, Jr, S C Stanton and Wm H Wilder, for two years, and Drs John Ridlon, Sanger Brown, and Harold N Moyer, for one year Judiciary Committee. L L McArthur for one year, Harold N Moyer for two years, F Henrotin for three years Membership Committee J H Stowell for three years, Henry P Newman for two years, and James B Herrick for one year Publication Committee E J Doering for three years, Henry T Byford for two years and Frank Billings for one year Auditing Committee D W Graham for three years, N S Davis, Jr, for two years, and Hugh T Patrick for one year

The revised Constitution and By Laws, after more or less discussion of certain sections, were adopted

Dr Sanger Brown gave notice that he would amend Article 7, after Section 3, at the next meeting, so as to read that "Any member in good standing may become a life member upon the payment $100 and shall thereafter be exempt from the payment of annual dues" In addition to this and following it in another paragraph he desires the change made that 'Any life member who has been a member of the Society for ten years may be elected to Fellowship upon submitting to the Society satisfactory evidence of fitness for such distinction"

Dr D W Graham also gave notice of an amendment to be offered by him at a subsequent meeting

Secretary Edwards was voted an honorarium of $250, and the Treasurer an honorarium of $200

The editor of the Society will not accept an honorarium of $200 during the coming year, but asked that the money go towards furthering the interests of the Society

Dr Sanger Brown spoke of the great importance of having the medical library located in the heart of the city, saying that if it was located down town many of the members could spend an hour or two hours a day with profit in consulting medical literature, and urged that a committee be appointed by the president to agitate this matter

Dr Truman W Miller stated that the trustees had taken this matter up

Dr D W Graham thought it was a mistake to abolish the Library Committee saying that the committee had had the subject under consideration for a year getting facts and information and had possible plans in view The information the committee had received was that the Crerar Library would be glad to have a medical department The other two factors to be considered were the moving of the medical department of the Newberry Library to the Crerar Library In order to do this it would be necessary first to obtain the consent of Dr Senn and second the consent of the trustees of the Newberry Library, and undoubtedly this could be obtained

President Henrotin thought the Board of Trustees as a body would have more influence in effecting such a change than a committee of three

The President then appointed Drs Doering and Miller to escort the newly elected president to the Chair

Dr Bevan was very warmly received He thanked the Society for the distinguished honor conferred upon him and said he would pledge himself to take a very active interest in the work during the coming year, and he would endeavor as far as possible to carry out the very broad scheme that had been inaugurated by his distinguished predecessor

The Society then adjourned until the second Wednesday in September

Chicago Ophthalmological and Otological Society

Discussion on Dr Hotz's Case

Dr Würdemann—This morning I removed an eye I had been nursing for four weeks, not believing that it contained a foreign body I first saw the case a day and a half after the accident, when I found an ulcerated wound of the cornea, prolapse of the iris and evident infection The prolapse was cut off and the infection treated The history of the case seemed to show that the foreign body was a large one, and I did not believe it to be in the eye Three weeks after, a skiagraph was made which showed the foreign body to be present This morning I tried to remove the foreign body after incising the cornea, but I was unable to do so with the magnet and had to remove the eye The foreign body was found in the eye, covered with firm exudate In six cases I have removed pieces of steel with the magnet from the iris and the lens, but have never removed a piece from the vitreous I believe it possible to do so only immediately after the accident

Dr Pinckard—I take it Dr Hotz reported this case particularly because the foreign body was removed through the wound entrance The only successful case I ever saw where a foreign body was removed from behind the lens was one in which a piece of steel was removed through the wound entrance In almost every case which I have seen, the eye was blind within a year afterward This particular case was a piece about eight millimeters long and four thick, a piece of chisel that went straight through the center of the cornea The case was sent at once, so that I saw it inside of an hour after the injury The first time the magnet was introduced I got the click, the second time the steel came to the lips of the wound, and the third time I got it out This was about four years ago, and the patient's vision in that eye is now about one tenth I have seen several cases where the eye has been saved, but there was no vision

Dr Gradle—Among eight cases I have had two instances of success in removing steel from the eye One was removed on the fourth day and could be seen distinctly with the ophthalmoscope It was removed through an incision in the sclera Two months later the vision was $^{20}/_{30}$ The second case was seen six months after the accident on account of failing vision The foreign body was easily seen with the ophthalmoscope Extraction with the magnet was easy and there was no reaction Eight months later the vision was $^{20}/_{70}$

Dr Wilder—The results reported are brilliant, but such results encourage this operation altogether too much Many cases of detachment of the retina, resulting from unsuccessful removal of foreign bodies, would not do nearly as much harm if left alone If all cases of operation by the magnet were reported after the lapse of several years, we should find that the number of successes would be very small, certainly not sufficient to justify doing the operation as often as it is done A positive indication for this operation is when the steel can be seen lying in the iris or lens, or in the vitreous If the eye is quiet and the steel is firmly adherent, I see no occasion for an attempt at its removal, as nature will soon cover it with an exudate To operate when the steel can not be localized, and only on the supposition that the foreign body is in the eye, seems to me injudicious

Dr Tilley—Early in the history of this Society I exhibited two cases with steel visible in the retina In both cases the eyes were quiet and there was some limitation of vision, but not much I had one case in which the patient persisted that there could be no steel in the eye I finally persuaded him to have the eye removed and there was found a piece of a cold chisel a little more than three quarters of an inch long

Dr Montgomery—The only case of successful removal of steel which I have had was one in which I introduced the magnet through a new opening The case came to me within an hour after the injury The bit of steel could be seen with the ophthalmoscope I made a section through the sclerotic and removed the steel without difficulty

Dr Haight—I recently had a case where a piece of steel had remained in the eye for sixteen years The eye was blind, but owing to the severe pain of the inflammation I removed the steel The patient refused to have the eye enucleated

Dr Fisher—In my experience it has been very rare to retain serviceable vision after removing a piece of metal from the interior of the eye This should not condemn the magnet, for when we have a piece of iron or steel in the interior of the eye conservative surgery demands the removal of the metal or of the eye

In regard to Dr Tilley's case, I saw the first one at the time and also some eighteen months after he discharged it A piece of metal was shining in the choroid, the media was clear and the vision was about one half when he left Dr Tilley At the time I saw him the eye was in a very serious condition, the lens was opaque and there was a mild cyclitis He refused enucleation At the time Dr Tilley discharged him, this might have been called one of the most hopeful cases of foreign body in the eye, yet the subsequent history shows how dangerous the leaving of such a substance is

Dr Hotz—It seems to me that Dr Wilder's position can not be sustained by clinical facts, if he says that the magnet does more harm to the eye than the foreign body, and that nature will cover the foreign body with an exudate to make it innocuous. I think it is a well known fact that nature does not do anything of that sort, as a rule, and that the foreign bodies in the posterior part of the eye, in the majority of instances, will destroy the usefulness of the eye and prove a source of danger to the other eye The object of the magnet extraction of the foreign body from the eye, in the first place, is to save that eyeball for the patient, even if no sight is to be saved, for the blind eye, even with a detached retina is certainly better for that patient than a glass eye, and, therefore, even if it were true that the disturbance by the magnet in the vitreous leads to detachment of the retina, that should not debar us from doing the operation, if we have a good prospect of preventing deleterious inflammations, cyclitis, etc. that the foreign bodies are apt to set up To remove the foreign body, as the Doctor says, when it is located in the iris and lens, and in the vitreous only if it can be located with precision, is another remark which surprised me, because it is just in the iris and the lens that foreign bodies may remain a good while, and in the lens particularly, without doing any particular harm, except clouding up the lens, but not endangering the future of the eye

I am far from encouraging the promiscuous operations, if I may so say, and I have taken opportunity in the past to discourage the use of the magnet for removing a piece of steel in the eye when an extensive cyclitis has taken place which in all probability will destroy the eye, whether the foreign body is retained in it or whether it is extracted I advise the operation *in the early stage as soon as possible after the accident*, especially before any inflammation has set in, and I do the operation, as I have said, in the first place, for the purpose of removing the cause of deleterious inflammation, to preserve the eye no matter whether or not in that eye the sight will be restored In the case I have reported, where the foreign body was lodged in the ciliary portion of the choroid I think it would have been very risky, and on my part reckless, to leave the foreign body in its position, because in that vicinity it was bound to set up inflammation sooner or later that would lead to the destruction of that eye and probably jeopardize the other eye

OPERATION AND AFTER TREATMENT OF CATARACT PREPARATION OF THE PATIENT

Dr Gradle—In order to minimize the danger of cataract operation, we should aim first to have the patient in the best possible state of health, secondly, to guard against avoidable infection On the first subject I can state nothing but self-evident truths If the patient has passed through any disease likely to interfere with his resisting power for the time being, it is to his interest to defer the operation Cataract is not an operation of emergency, but one for which the time can be selected If, therefore, he is in a condition at the time which may in any way endanger the success, delay is advisable Thus the persistence of a severe cough, or any form of intestinal disturbance likely to prevent the quietude of the patient should cause us to delay Whether in diabetes, so frequently a cause of cataract, we should delay the operation until we get the effect of an antidiabetic remedy, is perhaps an open question The results of operating during diabetes have not been unfavorable on the whole, but it seems to me wiser to diminish any possible source of trouble by reducing the excess of sugar, for clinical observation has shown that diabetic patients are very liable to pyogenic infections

Of more importance is the second division of our subject, namely, the combatting of any avoidable source of infection The most important topic to which I can refer is purulent inflammation of the tear sac Unless it is absolutely unavoidable, we should never perform a major operation on the eye while the tear sac secretes fluid If there is no time [illegible] cure of the condition, we must resort [illegible] to extirp[illegible] at least to temporary exclusion [illegible] ly [illegible] puncta with the cautery and ass[illegible] the [illegible] absolutely closed

In case of conjunctival disease, the operation should also be deferred until an absolute or relative cure is obtained and no further secretion exists Blepharitis, too, should receive attention before an operation is attempted At the time of the operation we should sterilize the skin and lashes by scrubbing with soap and water and any efficient antiseptic, so as to obtain as sterile a neighborhood as the general surgeon would demand It is a different question, however, regarding the conjunctiva Observations have shown that the conjunctiva, even when normal, has harbored germs, sometimes virulent germs The observations by Gelpe have made it likely that the more normal the conjunctiva, the less is the probability of existence of pathogenic germs This would indeed agree with clinical observations as to the danger of the operation. It has, however, been shown conclusively by Randolph, and by some continental oculists, that it is impossible to sterilize the conjunctival surface either by flooding with sterile fluids or with efficient antiseptics The latter, especially corrosive sublimate, are not merely useless, but absolutely undesirable on account of the irritation to which they give rise By reason of the secretion which they produce I would consider them a menace instead of a benefit We must hence take our chances at present as regards infection from the conjunctival surface and simply avoid the possible infection from impure skin, soiled lashes, or infected instruments

THE INCISION

Dr Montgomery —A proper knife is of the utmost importance I prefer a knife whose breadth is at least two and one half millimeters

As to the incision itself, I began first with the Graefe modified linear, and used that for a number of years Then I changed to one almost entirely in the cornea, but for the past eight or ten years I have made my incision just back of the limbus, including about one third of the circumference, and terminating with the conjunctival flap I use this incision whether for simple or combined extraction It is essentially what is known as the old flap My experience has been that we are not more apt to get a prolapse with this than with other forms of incision, and its great advantage is that we are more certain of a rapid healing of the wound, and it is the flap I consider of importance as coapting the cut edges

IRIDECTOMY

Dr Hotz—As a safe advice to beginners I should say, by all means operate with iridectomy, because that operation is applicable in all cases, because the delivery of the cataract is easier, and the removal of the cortical remains can be more thoroughly done after the iridectomy than through the intact pupil I know it has been said that those who perform an iridectomy must give good and sufficient reason for justifying the mutilating of the eye That is true, we should avoid mutilation if without it we can accomplish our object with safety and without taking any risks Now, are there any advantages in the simple operation? The cosmetic advantage of the central round pupil counts for little The eye is hidden by the thick glasses, it takes a close inspection to see whether the pupil of that eye is mutilated or not I have never in my life heard a cataract patient complain of mutilation, or about any annoyance that could be referred to the iridectomy The vision in the eyes operated upon with the iridectomy comes up to the same standard as in eyes with the simple operation We have all varieties of vision in one class as well as in the other That is about all there is to say about the advantages of leaving the pupil intact But, on the other hand, we have always to fear prolapsus of the iris, which happens to all operators, no matter how experienced an operator is he can not foretell in a given case whether it will happen or not, and if it does occur, the immediate excision of the prolapsus will change the condition of the eye to that as if the iridectomy had been done at once, or if the prolapsed iris be not removed, it will set up troublesome inflammation of the eye and lead to unpleasant results I feel much safer and easier at mind about the operated eye, when iridectomy has been done than when it has not been done, and therefore, as a rule, I adhere to the operation with the iridectomy

For a while I have been a sort of an eclectic After having made the incision, I let myself be guided by the behavior of the iris If it remained quiet in the eye and did not prolapse at once, or if after the removal of the cataract the iris promptly slipped back into the eye, I abstained from iridectomy relying upon the sphincter muscle to hold the iris back in the eye if the wound should open again and the aqueous humor escape That seemed to work in a number of cases very nicely, but sooner or later I had some bad results In spite of all the good behavior the iris showed during the operation, on the next day in opening I found the iris protruding, and while in some cases the excision of the prolapsed iris quieted the eye, in two instances it did not arrest the cyclitis, and the eye was lost, in one case it even necessitated the subsequent enucleation of the eyeball

CAPSULOTOMY AND EXPRESSION

Dr Beard—In regard to the cystotome, I use a modification of the old Graefe instrument, the modification consisting in a change in the angle of the point and the rounding of the angular heel The shank is straight and not malleable, and consequently the point rotates in a line with the handle The introduction of the instrument should be done with the greatest care Having pushed the cystotome, heel foremost, into the incision, passed it down flatwise between the iris and cornea until you reach the point where you desire to make the cystotomy, then turn the point toward the capsule, and make your incision quite extensive, the so-called peripheral cystotomy

In the expression I use two spoons, one a flat one for depressing the lip of the wound, the other for coaxing out the nucleus One must be careful not to press too long on the cornea and cause the lens to pop out suddenly, as the vitreous may follow For the soft portions of the cortex left behind, manipulation with the spoon is often sufficient If not, they may be removed with the handle of the spatula.

DRESSINGS

Dr Wood—(See Report of the American Medical Association for 1897)

SECONDARY OPERATIONS

Dr Würdemann—I find it necessary to do a capsulotomy in about six out of ten cases The operation is done through the cornea by means of two needles, except where the capsule is very thick, when I use scissors I have found it usually necessary to make but one capsulotomy The needles should be sharp cutting needles, those of Knapp preferred A secondary operation is sometimes necessary for removal of cysts of the iris These are preferably incised and compressed rather than cauterized

C P Pinckard, Secretary

SELECTIONS

Uncommon Form of Idiosyncrasy Contra Asparagus —Among the curiosities of medical literature are the stories, many of them well authenticated, of the peculiar susceptibility of some unfortunate individuals to certain odors and emanations. Among the substances which have been known to produce attacks of spasmodic asthma are roses, musk, tea, ipecacuanha, the odor of a cat, fried fish, the dust of oats, malt, rice, feathers, wool and that caused in the demolition of old houses Dr Eugene Deschamps has added asparagus to this long list. He has published a full clinical report of a victualer, over forty years of age, who suffers from severe spasmodic attacks of coughing whenever he attempts to prepare raw asparagus for the cook He is arthritic and nervous Twenty years ago he became a cook and remained so for a long time, but was temperate, and hence suffered little general ill health, except from slight anemia From the first however, he found that while trimming asparagus in the kitchen violent sneezing, coryza and running in the eyes set in Within half an hour dyspnea followed, with cough and expectoration All these symptoms used to vanish within an hour or two Hence he managed to continue at work and rose to be chef in large hotels But whenever he assisted the undercooks in dressing asparagus the fits returned worse than before He now owns a restaurant. Last spring he helped his own cooks on a busy evening and plucked a few stalks of asparagus The fits of asthma came on at once with unusual violence and he was ill for several days There was free expectoration and much coryza troubled the patient for some time Dr Deschamps gave iodids and bromids, with morphin in infusions of senega, cocain and borax lozenges and inhalations of steaming solutions of marsh mallow and poppy Neither fever nor albuminuria was observed The increase of intolerance of asparagus is remarkable, as the patient is better off in every respect than he was twenty years since, prosperous, contented and strong He can peel onions, carrots, turnips and other roots with perfect com fort, but after plucking a considerable amount of salsify, mild sneezing and coryza set in, but without dyspnea He has all along been able to eat asparagus freely, as the meal is never followed by any of the troublesome symptoms Dr Deschamps dwells on hay asthma, and states that he has seen a marked case of ipecacuanha asthma, a disorder, as has been said, noted by other observers —*British Medical Journal*

The Doctrine of Leprosy and Its Treatment —Dr E Baelz of Tokyo (*Berliner Klin Woch* , 1897, Nos 46 and 47), in regard to the transmissibility of leprosy, admits the possibility of contagion, but thinks that there must be a very intimate and long continued intercourse, he lays special emphasis upon the fact that the disposition to leprosy is very sporadic He does not think that the proofs offered by Blaschke, for the inoculation of Eastern Prussia by Russia, are sufficient, he combats the opinion that there is an immunity of Europeans, produced by former saturation, and now on the wane The cause of the small degree of contagiousness is to be found in the fact that the greatest number of lepers are free from ulcerous processes, that therefore the bacilli are under the protecting cutaneous cover, there are moreover, reasons for assuming that most bacilli degenerate in the ulcers In regard to the spreading of leprosy in the body, the author assumes that there is first a latent focus somewhere, that it breaks into the vascular system and that then the germs are carried abroad The author, among the various symptoms of leprosy, calls particular attention to a peculiar wax like glitter of the skin He considers the thickening of the nerve stems as one of the most important symptoms, in this respect, the nervus auricularis magnus, which may swell to the thickness of a lead pencil, is especially remarkable The tendon reflexes were frequently found, by the author, strikingly exaggerated As a diagnostic help the behavior of the leprous maculæ to anilin rubbing in may be of advantage, if a body is rubbed with a powder of fuchsin, methyl violet then covered closely with absorbent cotton, and if pilocarpin is injected into the patient, then the sound perspiring skin was colored, but not the leprous non perspiring places The author can not admit that lepra is independent of climate Thus he found, in Japan, that fever and general symptoms were often absent, pain on pressure over the nerves was only observed in very rare cases, just as rare were diseased mucous membranes of the mouth, of the nose and of the rim of the larynx and skin ulcers Also, the author can not admit a peculiar vulnerability of the leprous parts and that leprosy as such leads to cachexia Lepra mutilans arises, according to the author, usually not through ulcerous processes, but through a simple resorption of tissues In regard to therapy he mentions favorable results obtained by him by a combination of 1 Local treatment with salve of salicylic acid, applied in a peculiar manner, 2, of very large doses of oleum gynocardiæ, 3, of strong baths inflaming the skin. The salicylic acid is used as 20 per cent salicylic acid—lanolin—vaselin, at the diseased places which have previously been rubbed with pumice stone The gynocardia oil is administered in doses of 15 grams a day The bathing treatment consists in the use of the hot springs of Kusatzu, which are distinguished by a very strong content of free mineral acids. In a full bath of 200 liters there are 440 grams of free mineral acid, 230 grams of sulphurated earths, 45 grams of sulphatic iron Add to this a temperature of 45–53 C Of these baths the patient takes three a day and then five for the period of a whole month or longer

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PRACTICAL NOTES

Rheumatic Origin of Chorea —Moncorvo considers chorea the cerebro medullary manifestation of rheumatic infection developed in a hysteric or neurasthenic organism. He has found antipyrin, exalgin, asaprol and analgen, derivatives of the aromatic series known to affect rheumatic infection favorably, very effective in permanently curing a large number of cases of chorea His last eight cases were cured in eighteen to forty five days with 3 to 8 grams of analgen in twenty four hours —*Bulletin de l'Acad. de Méd* , May 17

Electuary for Gouty Rheumatism —(G Baccelli) Sodium salicylate, 30 grams, sodium nitrate and potassium iodid, āā 20 grams, colchicum oxymel, 100 grams, rob of lappa, 300 grams F s a A tablespoon morning and night in half a glass of alkaline water Continue for forty days

An Objective Tone Measure is suggested by Panse, by determining the amplitude at the moment when the sound of the tuning-fork becomes inaudible Personal tests with a number of forks of different makes resulted in almost identical figures.—*Münch. med Woch* , May 17

Serotherapy in Rheumatic Iritis —Boucheron has found Marmorek's antistreptococcus serum remarkably effective in fifty cases of rheumatic iritis He considers it a valuable tonic for the nervous system besides its specific action Small doses are best half to one cubic centimeter a day Fresh, acute cases are most rapidly affected —French Congress of Ophthalmology

Syphilitic Lesions in the Stomach are more frequent than generally supposed They simulate clinically simple ulcer and exulceration the secretions keeping up the morbid processes, from possibly a slight erosion, but they can be cured without surgical intervention, hence every case of ulceration should be investigated for syphilitic antecedents —*Gaz Méd de Paris*, May 21

Collodium in the Treatment of Pruritus Analis and Hemorrhoids —According to Samways, painting the anus with collodium will cure the pruritus completely in twelve to fourteen hours, and also tend to reduce the size of external hemorrhoids if applied on a tampon The one disadvantage is a sharp burning sensation for a moment, which can be obviated by painting with cocain beforehand —*Memorabilien*, May 7

Traumatic Hepatoptosis has been rarely observed It may occasion chronic peritonitis from compression or disturbances in the alimentary canal meteorism, colic, fever from intestinal intoxication, etc., or even lesions in remote organs from the habitual coprostasis, such as cerebral hemorrhage Hepatorrhaphy is indicated in recent cases, but if of long standing, palliative treatment is all that promises relief —*Gazz degli Osp. e delle Clin* , May 22.

Nitrate of Silver in Acute Lobar Pneumonia —Eight cases have been reported recently in Italy, all treated and promptly cured with five to fifteen centigrams of nitrate of silver in ten pills a day, decreasing to two thirds the amount after the fever subsided, which occurred almost at once The crisis appeared the second day, with complete recovery in five to twenty five days —*Gazetta degli Osp e delle Clin* , May 22

Stimulation of the Lacteal Secretion by Abdominal Massage is urgently recommended by M Schein, who has found it very effective in several cases of absent or defective secretion The blood is to be coaxed away from the uterus to the breasts, and the manipulations proceed on the assumption of important anastomoses between the genital organs and the mammæ —*Wien Klin Woch* , No 18

Menthoxol, Camphoroxol and Naphthoxol are obtained by adding to a 3 per cent. oxygenated water, 1 per cent. menthol or camphor, or 2 per cent. naphthol Camphoroxol requires 32 per cent. alcohol to dissolve it, the two others require 38 per cent The three, undiluted, destroy the spores of malignant anthrax in three hours Wagner recommends them highly after using them on 200 surgical cases in a 10 per cent. solution The wounds healed rapidly and healthy granulations were hastened The deodorizing properties of the oxols with their own pleasant odor, are special points in their favor —*Therap Woch* , 1897, 48

Orthoform in Gynecology —Blondel has cured a number of cases of endometritis with [illegible] soaked a week in ether saturated with orthoform [illegible] ses were [illegible] successfully with intra [illegible] dipped in glycerin, allowed them to pursue their usual occupations The orthoform prevents any pain, and also renders the curettement of the uterus painless, if applied on gauze an hour before —*Bull de l'Acad de Méd*

Ratings for Damages —In negligence suits for the benefit of the widow and next of kin, a different method of assessing the damages prevails in England from that which is usual in this country An illustration of the difference is furnished by a case tried on February 15, before Lord Chief Justice Russell and a jury It was an action by the widow of a sailor to recover damages for the death of her husband, who was a seaman upon a steamship belonging to the defendants, and was washed over board in consequence of the improper manner in which a portion of the cargo was stowed on deck Instead of awarding a lump sum, representing the injury sustained by all the family, as would be done in New York State, the jury assessed the damages at £200 for the widow and £100, £100, £60 and £40 for the four children respectively —*N Y Sun*

Intestinal Occlusion Due to Lumbricoids —Dr E H Bartley reports a case of intestinal obstruction due to lumbricoid worms, simulating appendicitis On opening the abdomen a ball of intertwined lumbricoids was found in the ileum, resting against the ileocecal valve and completely occluding the opening An attempt to force the worms through was without success As the appendix was swollen, edematous and intensely congested, it was thought best to remove it. The ileum was then opened by a small incision and about forty worms removed with forceps The incision was sutured and the abdominal cavity cleansed and completely closed All went well for forty-eight hours, then sharp pain was complained of in the left leg, which became very cold, gangrene set in and seven days after the first operation an imperfect line of demarcation formed about four inches above the malleoli Amputation was performed at the knee joint and the child made a slow but perfect recovery —*Archives of Pediatrics*, April

Remarkable Success of Static Electricity in the treatment of tuberculosis is announced by N M Wassilieff, who reports a number of cases, cured for four years, which he considers a sufficient length of time to establish the merits of his new treatment The patient sits on an insulated stool with rounded corners, connected with one of the conductors of the machine by a metal tube The electrode is held at a distance of one to two centimeters from his mouth, the metal part connected with the floor or earth by means of a metal chain The patient feels a slight movement in the air, and he inhales this electrified air for five or six minutes At first he feels a dryness in lips and neck, followed by a sensation of warmth in mouth and throat, and occasionally a slight transient dizziness If there is much debility, sparks also are induced over the chest, with a metal ball on a rubber handle, or with the finger These electric air inhalations are supplemented by an abundant, strengthening diet and pure air, if possible the patient continuing his usual occupations No secondary effects were observed in any case, even with advanced heart disease The report in the *Klin Therap Woch* of May 31 contains several typic observations of severe forms of the disease, with bacilli in the sputa, terminating in complete recovery to date The shorter the duration of the disease, irrespective of the severity of the lesions, the more rapid the cure He also reports thirty cases of non tuberculous affections of the respiratory organs promptly cured with this treatment, catarrhal, chronic bronchitis, etc -

Antiseptic and Therapeutic Values of Chinosol —According to the London *Lancet* for April 30, chinosol has been widely employed as a powerful and convenient antiseptic, and it is said to possess very distinct advantages over other antiseptic compounds previously in use It is a yellow powder of definite chemic composition, soluble in water, and containing a quinolin group in combination with potassium and the sulphate radical Its antiseptic, disinfectant, and deodorant properties have been determined with very satisfactory results by Dr Klein It is important next to turn its properties in practice, and on this important question Professor Hobday, of the Royal Veterinary College, has contributed an interesting and instructive paper to the March number of the *Journal of Comparative Pathology and Therapeutics* His experiments related to dogs, cats, and donkeys The internal administration of chinosol to human subjects has been tried by Dr Cipriani, whose results were recorded in that journal about five months ago In this communication the treatment of tuberculosis with chinosol administered by the mouth or injected locally was followed by a rapid and apparently permanent improvement The summary of Professor Hobday's results is as follows 1 Chinosol acts well as an antiseptic, disinfectant, and deodorant when used in certain proportions 2 Its action is better marked when used as a lotion than when used as a powder 3 The powder is not suitable for use on fresh wounds unless diluted in some way or other 4 For the disinfection of instruments care must be taken not to make the solution too concentrated With instruments care must be taken, Professor Hobday finds, that the solution should be of the definite strength, as otherwise the instruments lose their edge and the handles become discolored and rough to the touch

The Value of Green Vegetables and Levorotatory Sugars in the diet of diabetics is announced by Professor De Renzi, based on an "infinity of researches and observations," possibly the most important contribution to the cure of diabetes mellitus since Munson's articles in the JOURNAL (xxvii, pp 872, 922 and 1072) He confirms Külz's statement that diabetics assimilate levulose easily and that the levorotatory sugars in general are much more easily burned in the organism than the dextrorotatories, and advocates green vegetables for food, as they contain a kind of starch which is transformed, not into dextrose, but into levorotatory sugar in the organism, and neutralizes the effects of meat and fat ingested The sugar and acetone vanish from the urine, if green vegetables are eaten exclusively for a day or so, and prevent their appearance if combined with a mixed diet He has even found that a diet of green vegetables will prevent glycosuria in dogs after removal of the pancreas, and cure it if it has already appeared The vegetables may be boiled or eaten in salads, cabbage, chicory and endives were the most frequently used in his tests, but all are effective lettuce asparagus, spinach, cauliflower, etc., although he warns that green peas and beans must be very fresh and the daily amount not exceed one fourth kilogram In the severest "carnivorous" cases he restricts the diet to the green vegetables alone for two days, but then, and in "amylivorous" diabetes, allows a mixed regimen, including 100 grams green vegetables, 300 grams meat, 5 eggs and 500 grams red wine a day No sweetening substance is permissible except levulose, saccharin, etc., are "foreign substances" and injurious On account of the levorotatory sugar in fruit, this is also to be recommended in moderation He has established the following daily limits for grave cases Almonds, filberts, oranges, 500 grams net, mandarins, 4 to 8, pears and apples, one fourth kilogram, plums, strawberries, 500 grams gross, peaches, apricots, 100 grams net, cherries, 200 grams gross He ranks milk among the last substances to be allowed, although dishes cooked with milk are allowable in the first mixed diet Diabetic patients, he adds, should take considerable active exercise After ingesting a certain amount of carbohydrates they should take a walk, not a gentle stroll, but "with energy" Medication is worthless Electricity exaggerates the decomposition of nuclein and causes sugar to appear in the urine Mineral waters, massage, gymnastics are more useful, but the vegetable diet is the main thing, and it should be continued indefinitely and at least twice a year the patient should restrict himself almost exclusively to green vegetables alone for a few days —*Gazzetta degli Osp e delle Clin*, June 5, 1898

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SATURDAY, JULY 16, 1898

STUDIES OF THE GANGLION CELLS AND THE CHANGES THAT OCCUR IN THEM IN GENERAL DISEASES AND OTHER CONDITIONS

During the past few years observations have shown the marked superiority of the NISSL method of staining ganglion cells Many claims have been made regarding the significance of the changes brought out by the new stain, but it has not yet been made possible to correctly interpret the variety of the changes revealed

Dr JAMES EWING[1] recently read a paper before the New York Pathological Society, in which he sets forth the results obtained by him in a systematic examination of the ganglion cells of the central nervous system in a series of cases representing a variety of conditions

After having tested a large number of fixing agents recommended for the preservation of the structure of the ganglion cells EWING finds no agent is probably superior to alcohol, in the strength of 95 per cent or absolute, as originally recommended by NISSL He finds the following simple procedure as good as any Stain the sections for one or two minutes in a 1 per cent aqueous solution of methylene blue, gently heated, wash in water, decolorize in absolute alcohol, clear in oil of cajuput, and mount in Canada balsam

EWING concludes that the so called chromatic substance in the human ganglion cells is invariably arranged in a network with nodular thickenings In Purkinje's cells the chromatic threads are much thicker than in the cells of the spinal cord and cerebral cortex There is a cytoplasm with acido philic tendencies, in which it is thought there may occur important changes, the evidences of which, however, are not yet demonstrable by the present methods Of the radiating rows of oxyphile granules, described by HELD in connection with the axis cylinder processes, EWING found only indistinct traces In the thinnest specimens that could be secured this area appears granular, but the granules are usually distributed irregularly The reticular part of the cell body is surrounded by a rim of finely granular oxyphilic cytoplasm which has a very distinct and abrupt line of demarkation This is best demonstrated in freshly teased specimens In all probability the substance of the axis cylinder process fills in the meshes of the reticulum of the cell body, and if this be true then the oxyphilic cytoplasm furnishes the material which undergoes pigmentation and other degenerative changes, and then the essential lesions that lead to loss of function of the nerve cells are to be sought for, not in the chromatic reticulum, but in the cytoplasm This conclusion has already been reached by HELD and by APATHY, working with an entirely different technical method

As regards the postmortem changes, EWING found that the earliest ones consisted in a diffusion of the chromatin throughout the nucleus, in certain cases the nucleus was shriveled and irregular The chromatic reticulum of the cell body may undergo a granular splitting up, so that the cell becomes uniformly granular, vacuolation is also a constant and sometimes prominent feature Similar changes may affect the dendrites No uniform sequence can be given for the occurrence of the postmortem changes

EWING then examined ganglion cells from cases of pneumonia, typhoid fever, and a number of other infectious diseases, also from auto intoxications such as uremia, eclampsia, diabetic coma, sunstroke, from cases of acute poisoning by alcohol, morphin, carbolic acid and hydrochloric acid, and in a number of miscellaneous instances, including disturbances of the cerebral circulation, such as thrombosis and hemorrhage

From these observations it is learned that virulent toxins may not cause any changes in the nerve cells demonstrable by NISSL's method, that the chromatic reticulum is comparatively resistent to the action of many bacterial poisons In some cases of rapid septicemia, experimentally produced in the rabbit, bacilli were found in the interior of the ganglion cells, which nevertheless showed only slight evidences of degeneration It is thought that any changes that may occur are not so much due to the direct action of the circulating toxins, as to the loss of function in the cell processes or to loss of blood supply in minute foci The intermediate lesions may be referred to local circulatory disturbances, such as edema, capillary hemorrhages, thrombosis, obstructions [illegible] circulation, and lesions in the nerve trunks In those cases in which there had been extreme dyspnea and cardiac weakness before death the medullary nuclei, especially the tenth and the "nucleus ambiguus," suffered more than others, and these and related observations would seem to point to the possible influence of over-action and fatigue in determining the lesions in the ganglion cells In such diseases as hydrophobia extreme and wide-spread lesions affecting all parts of the cells occurred Chemical poisoning may abolish nervous function without many demonstrable changes in the nerve cells When the action of the poison is prolonged at least twelve hours, however, changes may be produced in the chromophilic substance, as would indeed be expected from the experimental study of the effect of various poisons upon animals

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[1] Studies from the Department of Pathology of College of Physicians and Surgeons, N Y, Vol v, 2, 1898

In the acute lesions it concerns a process of chromatolysis,' which may be of the same character in various groups of cases, although distinct stages may present different appearances When the lesions are ascribable to local anemia the changes consist of a uniform granular appearance of the chromatic substance, which may be fine or coarse, depending upon the stage of the process, all ending in the same complete loss of nodal thickenings with more or less preservation of the reticulum

Among the changes in the nucleus those of the nucleolus are to be mentioned The nuclear network may be granular and irregular or entirely absent Vacuoles and granules may occur in the cytoplasm

Ewing found that there was no specific features in the appearance of the cells in the fatal cases of alcoholism, tetanus, and thrombosis of the basilar artery, the principal occurrence was chromatolysis This process may occur without distinct change in the nucleus Ewing believes that further degeneration frequently occurs after chromatolysis is complete, because there may be entire absence of changes in the nucleus in the cells with preservation of the reticulum of the cell body, with functional activity, as can be demonstrated in over-heated rabbits Ewing has repeated the experiment of Goldscheider and Flatau of subjecting rabbits to high temperatures, and he has found that the chromatophilic bodies of the anterior horn cells may be largely obliterated, and yet the rabbits may be running actively about the laboratory

He concludes, first, that the chromatic substance of the nerve cell is more susceptible to the influence of disturbed circulation than to the action of virulent bacterial toxins

Second, that Levi's observation is of great significance, if this can be verified, namely, that during hibernation chromophilic bodies disappear

Third, that the relation of the chromatic substance to the activity of the cell still remains a matter of conjecture

Fourth, that in the premature, and even in the full-term infant, chromophilic bodies have been found to be absent or but imperfectly developed

Fifth, that chromophilic substance of the ganglion cells probably represents a state of physiologic nutrition, which may vary between the full development of such bodies to their complete absence as in the motor cells of hibernating animals

Sixth, that while the chromatic substance of the ganglion cells may be much diminished without real degeneration of necessity being present yet it is certain that acute degeneration of the ganglion cells is usually evidenced by various forms of solution of the chromatic substance

It seems we are still far from a systematized knowledge of the real pathologic histology of the ganglion cells The impression is gained from Ewing's study that until it becomes possible to demonstrate the delicate morphologic or chemic changes in the cytoplasm and the intermediate substance of the cell, the key to this branch of pathology will not be grasped

OUR INSPECTION OF SPANISH HOSPITALS IN CUBA

While making a brief inspection of the general hospitals in the Province of Santiago, Cuba we were so much impressed with the excellence of the management, the fine discipline and the care manifested in the details of treatment that we can not refrain from publicly testifying to the efficiency of our medical brethren in the service of Spain Our inspection was made through the medium of certain reports and returns which, instead of being in the hands of *Excmo Sr Inspector de Sanidad Militar de la Isla de Cuba, Habana,* to whom they were forwarded in accordance with Army Regulations, are now by the fortune of war, on file in the War Department of the United States, Washington, D C From these we learn that the general hospital at Holguin, the Military Headquarters of the Province, is one of considerable size, having a capacity of probably 1500 beds, for there are fifteen ward prescription books, 12 medical, 1 surgical and 1 for *Senores Oficiales* or commissioned officers, and some of these wards as shown by the series of prescriptions have as many as 112 beds The average daily occupancy of the hospital during the month of December 1897, was 700 patients All the reports and papers examined were intended to be rendered on printed forms, but it is manifestly an understood thing in the Spanish medical service that the absence of blanks does not constitute a valid excuse for failure to make reports, as several of the complicated forms were ruled by hand All were written with the utmost care to insure legibility, with the exception of the signatures of the medical officers, which are generally illegible although written with care and with elaborate flourishes above, beneath or around, as an integral part of each These intricate pen-traced additions to the sign manual were no doubt intended to give dignity and individuality but to the practical common sense of the average American they are schoolboyish in the extreme. All are free from blots or erasures, and are clean, if we except the ward prescription books, which bear evidence in finger markings and other excusable soils of having been carried from bed to bed and thence to the dispensary. All the forms are printed in single sheets, those used during the month being stitched together in a printed or hand-lettered cover to constitute the report for that period.

The *libreta*, or prescription book, of each ward shows the quantity of each medicine prescribed for each patient at the morning and evening visits, and the entries of each visit are closed and certified to by the signature of the chief of the clinic. These entries are of interest as throwing light on the character of the cases and the treatment adopted by the officers in charge of the various wards. An extensive materia medica is employed, over three hundred different preparations having been prescribed during the month. Quinin in various forms, antipyrin, jaborandi and limonada vegetal occur with great frequency. Sulphate of quinin is usually written sulfo qq^{a}. *Leche de vaca*, or cow's milk, appears in prescription as a medicament. The summing up of the quantities prescribed daily in the wards acts as a check on the pharmacist who renders a report at the end of the month of the quantities, and cost of each article sent out of the dispensary. The cost of the medicines used in all the wards during the month of February 1898, amounted to $2,998.35. Wine of quinia was the costliest item, 977 kilos costing $655.95. Among others we may cite wine of quinia and iron 197 kilos, $109.88, disulphate of quinia 8529 grams, $290.83, valerianate of quinia 1308 grams, $46.04, limonada vegetal 790 kilos, $28.48, acetate of lead 40 grams, 1 cent.

The next paper examined was a report of the official remedies compounded in the pharmacy, thus accounting for the constituents employed, as of sugar transformed into syrups and of alcohol into tinctures, etc., all of which have afterward to be taken up and accounted for. One would think this a satisfactory system of responsibility and accountability without a report showing the quantities of remedial substances, simple and compound, consumed on each day of the month. Nevertheless, such a report is rendered as corroborative of the totals for the month when verified by the daily prescriptions.

The next report examined was one, forwarded in triplicate, of articles purchased for the subsistence of the patients during the month of November 1897. It gives the name and address of the person from whom each purchase was made and the items, with certificates as to the current market price. The expenditures for the month amounted to $24,819.52. Some of the items and prices may be of interest: 7700 kilos of fresh beef at 87 cents per kilo, the heaviest item in the bill, $6,699.00, 1600 kilos of chicken at $1.25, 228 kilos of coffee at $1.10, 4125 kilos of milk at 43 cents, 5470 eggs at 10 cents each, 3750 liters vino tinto at 25 cents, and 513 liters vino generoso at $1.65. Another report in duplicate gives, classified by regiments, the name, company and rank of each patient, with date of entry into and discharge from the hospital, to show the claim of the hospital for subsistence and for an allowance for tobacco at the rate of 40 cents per man per month.

We examined also some annual reports from the General Hospital at Gibara, which is a seaport on the northern coast, about 20 miles from Holguin, all of which showed the same precision in matters of detail. This hospital is much smaller than the other, as its average number of occupied beds was only 100. Lastly, from the General Hospital at Puerto Padre, we found a series of reports purely medical giving all the cases under disease headings for the year 1897. Puerto Padre is on the north coast west of Gibara, and about 40 miles northeast of Holguin. These reports give all the items of information called for by our United States Regulations, name, rank, company, corps, age, nativity, occupation, dates of entry into service, of the beginning of the sickness, of admission into hospital, of discharge from hospital, cured, dead or invalided to Spain, and the number of days stay in hospital under treatment. Thus, under the heading of *Paludismo*, there are recorded 1726 cases, of which only 1 proved fatal, of *Fièvre amarilla* 64 cases, 26 fatal. The latter disease began in August, and was in full progress on Dec. 31, 1897, when the report closed. On the sheets for typhoid fever, pneumonia, tuberculosis, smallpox, venereal disease and syphilis, there is only the remark *Ninguno*, equivalent to "no case admitted during the year."

Whatever may be our views of Spain from our present inimical standpoint, we must confess that the glimpse we have obtained of Spanish medical methods as practiced in the hitherto obscure outposts of Holguin, Gibara and Puerto Padre, has given us a high opinion of the Medical Department of the Spanish Army.

THE NEWS FROM THE FRONT

No formal report has been received at the office of the Surgeon-General of the Army from Chief Surgeon POPE of the 5th Army Corps at Santiago, Cuba, but some idea of the work accomplished by the medical department of that corps may be gathered from the Associated Press and other dispatches from the front. The health of the troops on the voyage from Tampa, Florida, was excellent, only 1 per cent having been sick. After landing at the Juragua wharf and getting into position on Cuban soil the first excitement in medical circles was occasioned by the dash of the dismounted Rough Riders and Regular Cavalry, June 24 at La Guasima, in [illegible] jor F[illegible] on of the former, was reported as having distinguished himself by bringing in a wounded man from between the lines The hospital corps detachment did its duty handsomely, collecting the wounded at the first aid stations whence they were moved by litter to the landing Most of them were immediately transferred to the *Olivette*, which had acted as a field hospital for the corps during its voyage All necessary operations and dressings were completed before 3 A M of the 25th The main saloon was converted into an operating room, where the work was done by electric light

After this several days were passed in making the needful arrangements for the attack on El Caney and the hill of San Juan, which took place on June 30 and was continued on Friday and Saturday, July 1 and 2 Here the losses were at first estimated at 400, but later despatches from General Shafter stated that an underestimate had been made and that they would probably mount up to 1000, and still later press despatches indicated about 1800 as the number, a very heavy loss considering the small number engaged Concerning Friday's fight it was said that the greatest care and attention were bestowed upon the wounded men The hospital of the 2nd division was established on the field as was also that of General Wheeler's Cavalry Division, Major Valery Havard, Chief Surgeon The hospital of the 1st division was a short distance west of General Shafter's headquarters The ambulance companies proved very efficient and no wounded men remained on the field after dark The cases were so numerous that the hospital canvas was insufficient to shelter them Those coming in later had to be placed on the ground under palm trees in close proximity to the tents Surgeons and nurses worked unceasingly for forty-eight hours to attend to them and prepare them for transportation to the landing Medical officers from the fleet assisted the over-worked surgeons of the corps in their labors Many of the wounded found their way to the base hospital, for one despatch says The provisional hospital at Siboney received a large number of men who all night long loitered along the road from the front as best they could Wagons conveyed many, but others preferred walking, and throughout the night the road was filled with the wounded who moved slowly along the path leading to the sea coast

Attention has been called to two points, first, the small number of cases requiring amputation, and second, the small number of deaths among so many wounded men, and this latter notwithstanding the references made to the ghastly wounds caused by the brass jacketed Mauser bullet Among the deaths was that of Acting-Assistant Surgeon Danforth of Milwaukee, Wis, who was attached to the 9th cavalry Dr Danforth is said to have been picked off by sharpshooters while attending to wounded men on the road to the rear Several members of the hospital corps were wounded also in this way

The division hospitals were amply supplied with field dressings and supplies, but on account of the unexpectedly large number of wounded the stock of hospital shirts, drawers, blankets, etc, ran short Ordinarily in going into a fight soldiers throw away all their impedimenta or stack them in rear of their line of battle, so that blankets and knapsacks or blanket rolls containing spare shirts, drawers, etc, can be picked up anywhere, and as a matter of fact are picked up by the hospital corps men to be brought to the hospital with the wounded to eke out the hospital supplies, but as Dr Pope had to telegraph his shortage of these we must suppose that clothing rolls thus thrown away by our troops in the recent battle must have been considered as treasure trove by our Cuban allies Outside of these things the field hospitals lacked nothing, although we find two or three telegrams from Miss Barton suggesting the amount of suffering assuaged by her efforts at the base hospital at Siboney In one some elation is manifested at being under the direct fire of the Spanish sharpshooters, but it is not stated that this reckless exposure really took place during the truce The work of the Red Cross has been mainly that of providing supplies from the *Texas* to the starving Cubans

Ultimately as the operations were performed and the wounds dressed the wounded men were shipped off through the surf to the transports, the first of which, the *Iroquois*, arrived at Key West, Florida, July 5, with 320 sick and wounded These, with the patients already there, fill all the accommodations at that place so that future arrivals will be landed at Tampa, where the hospital train is on duty Meanwhile the Hospital Steamer *Relief* arrived at the front with ample supplies and a reinforcement of about thirty medical officers, among them Prof Nicholas Senn This handsome vessel has cot accommodation for 350 patients in the wards, and in case of necessity the hurricane deck may also be utilized for ward purposes Full descriptions of the outfit of this ship have been given in most of the daily papers, including her baths, electric fans, search light and Roentgen ray apparatus, disinfecting chambers, refrigerating rooms, stills and carbonating machine

CUMBERING THE RECORD

The *Index Medicus* is a valuable publication that has as a special type and example of American medical journalism done credit to our country It has also, in its complete bibliography of medical literature, introduced at least the knowledge of the existence of such a literature in this country into various quarters where it had been hitherto consciously or unconsciously ignored, and if at the present time there still exist those who consider American medicine still in its infantile swaddling clothes, we can, with the exercise of all needed charity, attribute such opinion to abnormal mental idiosyncrasy rendering them blind to facts, to a wilfully maintained provincialism and prejudice When all the world has to come to America to keep track of what is being done in medical publication, any wholesale disparagement of American medical progress comes with ill grace

There is, however, a point of view from which there is perhaps some reason for criticism of American medical literature No other country has such a multitude of medical serials, good and indifferent, and some of them, it is to be feared, falling under the category that is commonly sandwiched in between these two It is not necessary to say what ones these are, and the reader may, if he so inclines, apply the suppressed adjective to any of the irregular publications that comes to mind It is clearly impossible that all of these multitudinous publications can be kept at a high scientific standard, and equally so that their reason for existence can be the local demand for a high grade medical publication Some few of them, and those often not the best, are financial successes, sources of income to their publishers, but this is sometimes the result of catering to a low taste in medical reading, filling up their pages with recipes and answers to correspondents whose ignorance indicates the type of their constituents, or they perhaps are trade journals issued in connection with some drug or medical supply house which with its facilities for advertising finds way to make them remunerative A large number of the minor medical journals must of necessity make little more than their expenses, and this is sometimes considered as done by the addition of the subscription cost of their more valuable exchanges to the sum of the receipts They are advertisements for their editors and sources of additions to their libraries, and while most of them are eminently respectable if not otherwise remarkable in their editorial conduct, their multiplicity and the stamp of provincial mediocrity set by a few of their number, and in a measure, upon the whole, has worked to the disadvantage of the reputation of American medical journalism This is probably less true at the present time than in times past, and it may be said that when these serials really serve a useful purpose they do so by keeping up interest in medical matters by serving as the organs of local societies, and that they really are an indication of medical progress rather than of any unfavorable tendencies in the profession This is certainly true to a large extent, but it does not do away with the fact that the same amount of energy, intellect and financial outlay, combined on a smaller number of publications, would have better results It would certainly in that case do us more credit, for while there are European medical journals of no greater merits, they are not so numerous as a class, and are not accepted as setting the type of the medical literature as those in this country have been too often by foreign observers The Chauvinistic European judges all by the worst and weakest, and in this he is very apt to be followed by his imitators and admirers on this side of the Atlantic The real merits of our minor medical publications are likely to be ignored for the single reason of their multiplicity

The greatest evils, however, that we can attribute to this proliferation of medical journalism, are to be looked for in the overloading of our medical bibliography thus produced It is clearly impossible for each and every local medical journal to keep itself filled with really valuable original articles, and were it so it would be hardly desirable Many of them are ephemeral publications, their files are not to be found complete in any medical library, except it may be that of the Surgeon-General's office, and valuable matter contained in them would be practically lost to the world, at least so far as the possibility of original reference is concerned This is in fact too much the case, and the remedy is not apparent under existing conditions

Another evil which these so numerous medical journals favor, and one that also needlessly cumbers up our medical literature, is the custom that many reputable and prominent medical writers have of utilizing them for the republication in duplicate, triplicate or even quadruplicate of their articles It gives their views and discoveries a wider public, it is true, but it would be better if this were attained by a more extensive circulation of a lesser number of journals As it is, it is confusing to anyone engaged in medical research, and all the more so if, as is sometimes the case, the articles while practically the same are published in slightly modified form and with changes in the title The *Index Medicus* is sometimes therefore on embarrassing guide in looking up the literature of a subject by reason of this undue cumbering of the record

It is not to be understood from the above that any wholesale condemnation of the over-numerous medical journals of this country is intended The fact that there are so many of them, however, weakens their influence collectively and individually, and the standing of American medical journalism suffers in the estimation of some whose judgment may not always be correct but yet has its effect There are also some, it must be admitted, that are not exactly creditable representatives of their class and by the too common synecdochal method of certain critics they are considered as typical of the whole In addition to this we have by reason of their existence the occasional practical loss to the world of valuable contributions and still more often the needless overloading of medical bibliography with titles duplicate or otherwise-that will be forever practically inaccessible for original reference to the mass of scientific workers in medicine

According to the *Index Catalogue* and the *Index Medicus* our c [illegible] the world [illegible] ical bibliography I[illegible] that [illegible] asses it to so

FURLOUGH THE CONVALESCENTS

During the later years of the Civil War, it was found that our convalescent sick and wounded recovered faster when sent home on furlough, than when retained in hospital or convalescent camp

Not only was the ever present element of home sickness eliminated by this practice, but the over burdened Medical Department was relieved of much care

It is hoped that this practice may be renewed in case of our gallant Volunteers in this War

CORRESPONDENCE

What is to be Expected from the Surgical Treatment of Tubercular Lungs?

CHICAGO, July, 1898

To the Editor —In consequence of the surprising declaration of Dr Murphy, that tuberculosis of the lungs can be cured by injections of nitrogen gas into the pleural cavity, the question arises, what may we expect of this measure, setting aside all the difficulties arising by impossible diagnosis of adhesions, which would in some cases make the injections inefficient We will only consider cases in which the method would effect a total compression of the diseased lung What will be the consequence of such a state, so far as known by pathologic observation?

1 It may be remarked that we know such cases, in which a healthy or emphysematous lung is compressed by rupture of some air cells, mostly in the place of a circumscribed adhesion of the pulmonary surface to the costal pleura In general such traumatic pneumothorax heals without any difficulty

2 If a tuberculous lung is collapsed by pneumothorax, occasioned by a rupture of its surface, mostly by infection of the pleural cavity by the contents of the ruptured parts, a pyopneumothorax is the consequence But in many instances, this resulting pleuritic effusion may be very slight or totally deficient The rupture heals and we have a simple pneumothorax, not very different from the artificial process proposed by the bold operator These forms of pneumothorax can subsist very long in tuberculous patients Is it observed anywhere, that under these circumstances the tuberculosis of the collapsed lung is healed or at least reduced? This question can only be answered by observation So far as I can remember, I have never seen any signs of reduction of a simple or suppurative tuberculosis under such compression. The peribronchial knots, which are lying superficial, are protruding over the surface of the compressed parts and will not be reduced by exclusion of the air in the adjacent air cells On the other hand, ulcerations of the bronchi or tubercular deposits in the walls of a cavity in the apex or elsewhere in the lungs, will not be under different conditions than they are in a respiring organ Bronchi with cartilaginous walls and cavities with fibrous surroundings can not collapse, and will receive the same or a somewhat smaller quantity of air in respiration The air included in these cavities may become somewhat richer in carbonic acid and poorer in oxygen, but this does not seem to be a healing factor, because quite the same composition of air will arise in every badly ventilated apex of the lungs The proposition of Hanau is generally accepted that the apex of the lung becomes the prominent seat of tubercular infiltration by insufficient ventilation, there being a normal condition and in a much higher degree in such persons with abdominal respiration Every physician treating tubercular patients institutes regular gymnastics in such cases to promote deep inspirations and prolonged expirations under higher pressure If a change of respiration takes place in such cavities with solid walls in consequence of an artificial pneumothorax, it will endanger these parts and prevent healing of the tubercular process contained in them

The artificial pneumothorax may influence the course of tuberculous processes favorably only in one respect by lessening the expectoration retained in cavities or bronchi It may be that in this way also the spreading of tuberculosis into the inferior parts of the lung may be impeded, certainly for a short time and not definitely Dr Murphy is to be credited that coughing patients can sleep undisturbed by cough after the institution of the artificial pneumothorax, but it is questionable whether tubercle bacilli will die in the retained sputum and pus At any rate, the surgeon would not consider such a retention of pathogenic organisms as helpful On the contrary, we always search to eliminate such organisms and dying or dead cellular material That tubercle bacilli and cocci will not die in such masses of pus, mucous matters and polynuclear leucocytes is shown by the vegetation of these organisms in the caseous tuberculous infiltrations The destruction of these organisms is effected by certain forms of leucocytes, named macrophages by Metchnikoff, and we are glad if we can promote their appearance in the sputum, because their presence denotes the first sign of beginning salutary reaction of the body I demonstrate this often to my pupils in the tuberculocidin treatment This salutary change is directly hindered by the artificial pneumothorax, promoting not only atelectasis of the air cells, but effecting also anemia The elastic tissue of the lungs absolutely closes all small vessels, if it retracts by the pressure of the injected nitrogen gas

All clinical experience demonstrates that anemic condition of the tissues, and particularly in the lungs, is favorable to the development of tuberculous processes, if such germs are present. So Traube has shown that stenosis of the pulmonary artery is followed mostly by tuberculous lung affections The same is the case in deformities of the chest, impeding the movements of the chest wall, as in lordosis and scoliosis of the spine The process always commences on the side where the thorax is contracted The flat chest, so often present in hereditary forms of tuberculosis, promotes the development of the disease in the apices of the lungs and hinders the process of healing The same effect is produced by a weak heart, so often accompanying this malformation of the chest. Congenital aplasia of the aorta promotes anemia (Virchow) and later frequently leads to tuberculosis

We observe quite the contrary in a state of increased blood pressure, as in well compensated cases of valvular destruction of the left side of the heart. After the first observation of Traube, who considered this condition as favorable in tuberculosis, I have during the past thirty years observed many cases of involvement of lung tuberculosis under this condition, but I know also, that if the compensation is destroyed, as it occurs often in advanced age, the old repressed tuberculous process can break out again, mostly in the form of tubercular pleuritis, the lungs being saved more as the pleura by the direct flow of the blood to them through the pulmonary artery, whereas the weakened left heart ceases to impart enough pressure to the arteries of the body This fact, the limitation of tuberculous development under the effect of higher venous pressure has been practically demonstrated in the treatment of tubercular knee joints, by Bier, a pupil of Esmarch This treatment by the way, will only be effectual if the stagnation of blood is very limited, because higher degrees of venous stagnation impede the emigration of leucocytes (Cohnheim)

If one were to try to produce the most favorable condition of circulation in tuberculosis, by physical means, one should institute artificial destruction of one aortic valve, which I have first shown in dogs to be a very harmless operation, but I would not counsel its performance in men

In Dr Murphy's experiments with tuberculous individuals the higher blood pressure in the not operated lung can be favorable, but the effect will only be temporary, and dangers will not be excluded, such as ruptures and bleedings from the single respiring lung, which then has to sustain a higher pressure of circulation and respiration

From all this I must conclude that the proposed treatment of tuberculosis of the lungs by an artificial pneumothorax can not be supported in any way by our present knowledge, but we may quietly expect farther communications from the side of the bold surgeon

The question of partial or total extirpation of one lung, also developed in the short theses of Dr Murphy, is one of the gravest problems of modern surgery and we must be very well satisfied that Dr Murphy, as it seems, has vanquished many difficulties But we must say, also, that the indications for these operations will only arise if the progressive tuberculous process has entirely subsided Large cavities filled with non-tuberculous pus or extensive fibrosis with numerous small cavities would give good opportunities for such operations Certainly it would be a very great progress in our science, if the surgical art would give us the opportunity of inspecting the diseased lung in the same safe manner as we can now do the organs of the abdomen EDWIN KLEBS, M D

Melancholy in a Leper

NEW YORK, June 6, 1898

To the Editor —Some time ago you published a letter of Dr Hansen, in which he took occasion to assert that there is no such thing as *melancholy of a leper* He said, with Norwegian urbanity, that the melancholy in question was an invention of Dr Ashmead Will you kindly publish, for the enlargement of the knowledge of this gentleman in matters of leprosy the following case, reported by Professor Meschedes, Königsberg, Prussia It is really too bad that Dr Hansen, probably on the strength of his bacillary discovery, should have come to the conviction that in matters of leprosy, when he speaks the universe ought to listen with entire submission

The gentleman from Norway preserved through the Conference of Berlin an attitude which is entirely in accord with such a conviction ALBERT S ASHMEAD, M D

From a Report of Dr Schlessinger of Vienna, Section of Neurology, International Medical Congress, Moscow, August 19 to 26, 1897

Professor Meschedes "I consider that leprosy exerts a direct influence on the development of dementia, the cerebral phenomena resulting possibly from some irritating lesions of the nervous system brought on by their toxins I base this theory on a case of psychosis with which I have recently met in a leper The patient, a man of 28 showed the first symptoms of leprosy in 1891. In December, 1896, without any obvious cause, he was suddenly attacked with symptoms of acute dementia which necessitated his admission into my wards He was discharged in four and one half months, having recovered from his mental affection, and was transferred to the medical wards to receive treatment for the leprosy itself After a short initial period of melancholia, during which the patient refused to take food, hallucinations of all the sense organs suddenly developed, with excitement, oppression, intense motor discharges and delirious ideas of a religious nature After a few remissions and an attack of megalomania, the mental phenomena gradually improved and finally disappeared entirely

"We may note as constituting the peculiarities of this case, sudden explosive onset of the mental trouble and also the existence during the initial period, of evident symptoms of cerebral and cutaneous congestion The skin of the face was particularly red and swollen, and the cutaneous sensation evidently constituted the main starting point of the hallucinations The patient fancied that he was being tortured, he felt a sensation of heat which he himself estimated to have been fourteen times higher than the normal body heat, there also existed a state of sexual excitement of unusual intensity and a disturbance of the muscular sense, which gave him the impression that his whole body was being lifted The con*gested state of the skin subsided on parallel lines with the ret*rogression of the psychic disorders The last hallucinations of the period of decline also manifested themselves in the sphere of cutaneous sensations, the patient had the impression that snakes were creeping round his legs

"The predominance of tactile hallucinations, pleads, in my opinion, in favor of the hypothesis of a *direct action* of the leprosy bacilli on the nervous system

"I may add that one of the patient's brothers had also suffered from dementia No other member of the family had ever exhibited any psychic disorders, so that there can be no question in the case of an hereditary psychopathia, properly so called, but a simple family predisposition to mental trouble The question might also be asked whether the attack of dementia was not due in the case of the brother, to some *latent leprous infection* "

Removal of Foreign Body from Trachea

DENVER, COLO , June 26, 1898

To the Editor —As I am under obligations to some of the members of the AMERICAN MEDICAL ASSOCIATION to report to them the progress and final results of the following case, I would like very much, with your permission, to use THE JOURNAL as a medium through which to reach those who became interested in the case during their attendance at the AMERICAN MEDICAL ASSOCIATION here in Denver

History of case —I was called May 8, 1898, to see George S , aged 12 years, and found him with temperature of 103 degrees, rapid breathing and a hacking cough, with occasional paroxysms of severe coughing, which would leave him almost exhausted The mother informed me that he had swallowed a pin on May 25, 1898, and that he had coughed very hard ever since that date By physical examination the presence of a pin in the left bronchus was diagnosticated by the entire absence of aspiration sounds over the entire left lung and the sibilant sound heard near the bifurcation over the left bronchial tube I decided that in place of swallowing the pin he had sucked it into the treachea and from there into the left bronchus, and advised an operation for its removal, but it was June 13 before I could get permission, on which date I performed inferior tracheotomy and found the point of the pin at the bifurcation and the head in the left bronchial tube The pin was seized and removed by a long forceps The head of the pin was covered with a thick muco purulent matter which formed a plug that completely obstructed the bronchial tube On removing the plug a free discharge of pus followed from the left lung After the patient's head had been lowered for quite a while to facilitate the flow of pus, the wound was cleansed and dressed Expectoration was rather free for the first two or three days Temperature gradually subsided, and by the ninth day it was normal, cough and expectoration very slight On the fourteenth day the patient was discharged cured

In behalf of the X ray, I will say that it was tested three times in this case and each time failed to locate the pin

A J HORN, M D

The Philippine Islands

FORT WAYNE, IND , July 10, 1898

To the Editor —The prospect that the Philippine Islands may come under American rule suggests a matter of in
to the medical profession [illegible] the [illegible]
large and the country is [illegible] red
become necessary to send [illegible] a

ber of men who will aid the administration there and who must combine scientific attainments and a habit of accurate observation with an occupation that will recommend them to the favor of the inhabitants of the group.

It is obvious that the medical profession alone can furnish such agents. Missionaries would come into collision with the religious prejudices of the people and traders would not possess the requisite training to study the ethnology, natural history, geology, economics and diseases of the Philippines. An immense store of invaluable information would be collected by men working in a scientific spirit and located in the numerous provinces and districts of the islands, and they would more than pay the expense of stationing them by making a census and reporting on the habits and resources of the people.

An excellent plan would be to divide the islands into sanitary districts, with a medical officer over each. He would have medical charge of the district, and also would be required to report on the matters mentioned above, and on all others of interest to the government of the United States. The medical officers would soon be self supporting, and would be found useful in representing the administration in their districts. There are lawyers holding most of the offices of the government and the medical profession is systematically ignored. But this is a favorable opportunity to secure recognition for the culture and administrative ability of American physicians. They would go to these lands not to plunder or oppress but on a merciful mission, and the whole world would be enlightened by the reports they could furnish, while the United States would be honored by the work they would do. This would be a new departure in colonial administration and its success would be sure to make other nations imitate it.

I hope that the practical members of the profession and the influence of the Journal may be enlisted in support of this suggestion. I am very respectfully yours,

W. P. Whery, M.D.

Picric Acid as First Aid in Treatment of Burns

Granite City, Ill., June 28, 1898.

To the Editor:—The treatment of burns is as yet unsatisfactory, the death rate about the same and many remedies are lauded, but picric acid in solution has given me excellent results, therefore I wish to record several cases treated by this procedure.

Shock and septicemia are the most dreaded results from the more severe cases, but all this can be eradicated by the persistent use of a weak solution of picric acid.

During the past three years several cases have come under my care and all have been treated alike, much to my satisfaction. While I do not wish to be original in this sense I wish to recommend a good thing.

T. B. K., chemist, age 23 years, in opening a can of gasoline the escaping gases exploded, burning him frightfully about the body, face and extremities. He was carried to a building and when I saw him was suffering untold agonies. I immediately had prepared a saturated solution of picric acid and bathed the whole body in it, covering the body with cotton and bandages. After a few minutes he said the pain was all gone and fell into a sleep. Several others who got burned at the same time expressed themselves as relieved as soon as the solution was applied.

I generally make up a pint of solution at a time and dilute as wanted.

Picric acid	4 dr.
Alcohol	4 oz.
Water distil	8 oz.

Picric acid for burns of the first or second degree is the simplest, quickest and most satisfactory treatment in my hands. It deadens pain and allays suppuration, healing spontaneously, the only objection being its staining qualities.

I generally soak absorbent cotton and lay it smoothly on the wound, cover this with rubber tissue and leave it on for two days or until a new skin forms.

I also apply an ointment occasionally, composed of ichthyol and vaselin, which softens the hardened epidermis.

While I do not propose to bring out anything new in this modern treatment I hope at least it may be more often tried by those who have discarded the old fashioned methods so long employed on suffering humanity.

F. E. Tulley, M.D.

Plagiarism

Muncie, Ind., June 23, 1898.

To the Editor:—In Vol. xxx, No. 24, page 1401 of the Journal, under "Original" appears an article by Gilbert I. Cullen of Cincinnati, Ohio, which has the appearance of being original, and no doubt the writer wishes to convey that idea among the readers of the Journal, as no credit is given any one for the thoughts or language used.

It is the boldest piece of plagiarism I have noticed for years. It is apparently taken in its entirety from the "Encyclopedia Britannica." The Werner Edition, 1895, contains every thought and nearly every sentence exactly as it appears in Cullen's article. The only difference is, that the encyclopedia contains a little more.

A man who will copy from an encyclopedia and publish the article in a scientific journal of medicine and surgery as an original article, should be exposed, and dishonor heaped upon his head. It is an imposition upon the readers of the Journal and also upon the editor and publishers, as it tends to lower the high standing and dignity of the Journal.

Respectfully, F. E. Hill.

Etiology of Cerebro-Spinal Meningitis

Paris, Ill., June 27, 1898.

To the Editor:—I have been very much interested in recent reports and papers on cerebro spinal meningitis, which I believe is caused by mold. Four of my cases were attacked after eating crackers that had molded and been warmed over by a grocer, and all have been in damp houses during damp weather. A great many cases occur in armies and among those who live in Alaska, where victuals are liable to be moldy. I notice that the straw used by the Third Illinois Infantry was damp.

Respectfully, W. H. Ten Broeck, M.D.

Precocious Pregnancy

Indianapolis, July 7, 1898.

To the Editor:—In reference to an article on page 42 of the Journal for July 2, taken from the *Lancet* of April 23, I wish to say that I delivered a girl about June 1, at the age of 12 years and 10 months. The boy baby weighed seven and one half pounds and is now doing nicely. The labor was normal in every respect, no forceps, no laceration, and an uneventful puerperium. This girl had menstruated several times before impregnation. She was not over-developed, and really not fully developed, there being little hair in the axillary or pubic regions. She is nursing her babe, though her breasts are small.

Sincerely,

Wilmer Christian, M.D.

P. S. I understand there was a girl 12 years of age delivered at the Women's Hospital, six years ago.

Des Moines, Iowa, July 4, 1898.

To the Editor:—On Jan. 20, 1889, I was called to attend a case of confinement. On my arrival I found a girl 12 years and 10 months old in labor. After a rather tedious but uneventful labor I delivered her with forceps of a twelve pound boy. The infant lived but a short time. The mother had a normal puerperium The mother of the girl was only 31 years of age at that time and had a daughter nearly four years older than the one confined I am familiar with another case in which the mother was less than 13 years and 6 months old I confined a girl in 1893, who stated to me that she had never menstruated and was less than 14 years old This was afterward verified by her mother She had no hair on the pubes, no enlargment of breasts or other signs of puberty Very truly, L DRAKELY ROOD, M.D

BOOK NOTICES

Abdominal Surgery By J GREIG SMITH, M.A , F R.S E Sixth Edition Edited by James Swain, M S , M D , etc Two Volumes, 8vo, cloth Pp 1171 Philadelphia P Blakiston, Son & Co 1897 [E H Colegrove & Co , Chicago Agents.] Price $10 00

"Less than a year had elapsed," says the writer, "from the publication of the fifth edition of this work when it became necessary to issue a sixth." The editor was actively engaged in the preparation of the fifth by abstracting literature, and the author recognized his assistance by requesting him to edit the sixth edition, but he had scarcely finished the first 100 pages when the death of the distinguished author occurred

Little change had been necessary to make in the text except such as the progress of surgery has made necessary The chapter on Hysteropexy has been rewritten

*It is altogether unnecessary for us to commend to our read*ers this masterly work It is sufficient to say that the present edition is unsurpassed

The first volume contains six sections, viz 1, Diagnosis of Abdominal Tumors , 2, Abdominal Operations Considered Generally , 3, Operations on the Ovaries, the Fallopian Tubes and The Broad Ligaments , 4, Operations on the Non Gravid Uterus , 5, Operations on the Gravid Uterus and for Ectopic Gestation , 6, Operations on the Stomach

The second volume contains eight sections, viz 7, Operations on the Intestines , 8, Operations on the Kidneys and the Ureters , 9, Abdominal Operations on the Urinary Bladder , 10, Operations on the Liver, the Gall bladder and the Biliary Ducts , 11, Operations on the Spleen , 12, Operations on the Pancreas , 13, Unclassified Operations for Growths and Cysts in Omentum, Mesentery, Peritoneum and Parietes , 14, Operations for Abdominal Injuries , 15, Operations for Peritonitis and its Effects

Text Book of Physiology Edited by E A SCHAEFER, LL D , F R.S , etc. Volume I Pp 1036 Edingburgh and London Young J Pentland New York Macmillan Company 1898 [From A C McClurg & Company, Chicago]

This work is intended to be exhaustive and to furnish in an accessible form the substance of the literature of the world bearing upon the subject, so as to render it largely unnecessary for the student of physiology of the higher class to consult original papers in foreign languages

The first volume deals mainly with the chemic constitution and the chemic processes of the animal body and with those physical and chemic phenomena which are connected with the production and elaboration of the secretions and other fluids of the body The work is thorough and well finished

The contributors to this volume are J S Edkins, M.D , Arthur Gamgee, M D , W H Gaskell, M D , LL D , Francis Gotch, B Sc , Albert Gray, M D , J Berry Haycraft, D Sc , M.D , W D Halliburton, M.D , F R.S , Leonard Hill, M D , F Gowland Hopkins, B Sc , M D , J N Langley, M D , LL D , F R.S , B Moore, M A , D Noel Paton, M.D , M S Pembrey, M.D , E Waymouth Reid, M B , W H R Rivers, M.D ; J Burdon Sanderson, M D , D C L , F R.S , E A Schaefer, LL D , F R.S , C S Sherrington, M D , F R.S , E H Starling, M D

Uric Acid as a Factor in the Causation of Disease—A Contribution to the Pathology of High Blood Pressure, Headache, Epilepsy, Mental Depression, Paroxysmal Hemoglobinuria and Anemia, Bright's Disease Gout, Rheumatism and other Disorders By ALEXANDER HAIG, M A , M D Oxon , F R. C P Fourth Edition with 65 Illustrations, pp 698 Philadelphia P Blakiston, Son & Company 1898 [E H Colegrove, Chicago Agent] Price $3 00

This work first appeared in 1892, the second edition in 1894, the third edition in 1896 and the fourth English edition in 1897

To those who believe that all ills in the human body, with a few exceptions, are due to uric acid, and "to be alkaline is to be happy," Alexander Haig appears as an enviable apostle and his book as the light of the world We take pleasure in welcoming this new edition as embodying all the evil that can be said of uric acid and a thorough scientific demonstration of its baleful effects on the human body To those not familiar with the work the book will be a revelation, not only on account of the undisputed facts which the author produces, but for the forceful manner in which they are arranged That the work has passed to its fourth edition is plain evidence, if any were needed, as to the popularity of the work

The Genesis and Dissolution of the Faculty of Speech A Clinical and Psychological Study of Aphasia By JOSEPH COLLINS, M D Pp 432 New York The Macmillan Company 1897

This work was awarded the Alvarenga Prize of the College of Physicians of Philadelphia, 1897

It is an exhaustive monograph on the subject of aphasia and contains chapters on the history, general analysis and conception of aphasia, describes the different varieties under the head of motor aphasia, sensory aphasia, subcortical sensory aphasia, total aphasia and chapters on the diagnosis, etiology, morbid anatomy, treatment and medico legal aspects

This monograph will long stand as one of the most valuable contributions yet made on this subject

A Manual of Hygiene and Sanitation By SENECA EGBERT, A M , M D Illustrated with 63 Engravings Pp 368 Philadelphia and New York Lea Bros Company 1898

This is a fair epitome of the existing state of the hygiene of the day with the exception of the chapter on quarantine, which, being taken from an unfair and misleading chapter on the subject in Rohé's Text-Book on Hygiene, is to that extent inadequate

Transactions of the Section of Laryngology and Otology of the American Medical Association at the Forty eighth Annual Meeting held in Philadelphia, June 1–4, 1897 Pp 363 Chicago American Medical Association Press 1898

This volume consists of reprints on extra paper of the papers read in the Section on Laryngology and Otology at the Philadelphia meeting of the ASSOCIATION The volume is handsomely printed and it is needless to say that the illustrations present a better appearance than they do in the current number of the JOURNAL on account of the difference in the paper

These Section books are becoming more and more popular each year, as they preserve in convenient form the special papers of the Section, without other matter

The Johns Hopkins Hospital Reports Report in Gynecology 4to Pp 136 Baltimore The Johns Hopkins Press 1898

The contents of this volume are 1 A Critical Review of 1700 Cases of Abdominal Sections from the Standpoint of Intraperitoneal Drainage, by J D Clark, M.D 2 The Etiology and Structure of True Vaginal Cysts, by James Ernest Stokes, M D

These high class observations are of great value to the medical profession and highly creditable to the authors The possessor of a *series of* these reports, seven vol[illegible] which have been issued, is [illegible] having at [illegible] large share of all that [illegible] and surgery

Illustrated Skin Diseases An Atlas and Text with special reference to Modern Diagnosis and the most Approved Methods of Treatment, by William S Gottheil, M D New York E B Treat & Co

This work, three portfolios of which have been issued, will be issued in quarter portfolios, each containing 24 quarto papers, a text with numerous formulæ and four plates of cases from life, by a new photographic process

The illustrations are accurate and numerous, and the plates are extremely life like We shall look for the succeeding portfolios with interest, and in the mean time compliment the author and the publisher on the splendid series so far presented

Proceedings of the Dedication of the Hunt Memorial Building by the Hartford Medical Society, Feb 1, 1898

This volume, which is handsomely illustrated, contains pictures of Dr and Mrs Hunt, the building and its interior rooms, a poem by Mayer, the history and purposes of the building by Dr Melancthon Storrs, the address on the occasion of the acceptance of the building by Dr G W Russell, and the dedicatory address by Daniel C Gilman, President of the Johns Hopkins University

The volume concludes with the plans and description of the interior of the building and the list of members of the Society

Yellow Fever, Clinical Notes, by Just Touatre, M D , translated from the French by Charles Chassaignac, M.D Pp 206, New Orleans *New Orleans Medical and Surgical Journal*, 1898

This work while translated from the French was not published in France, but Dr Touatre who is a New Orleans physician wrote it in his mother tongue, being more familiar with that language than with the English, and his colleague, the accomplished editor of the *New Orleans Medical and Surgical Journal* has translated it

It is a work giving results of thirty three years of study, and observation of nine epidemics and it will be seen on inspection to be the work of a master

Country Doctor, by Thomas Hall Shasted, M.D , 1898, published by the author

This book was originally published in the Journal of the American Medical Association and two hundred and fifty copies have been printed, privately, for the author's friends The sweet and simple story is charmingly told and the illustrations do not detract from the beauty of its English Thousands of our readers enjoyed it when it was printed in the Journal, and we refer those of our new readers who are not fortunate enough to possess a copy of the book, to the Journal of Feb 27, 1897

Twenty fourth Annual Report of the Secretary of the State Board of Health of the State of Michigan Cloth Pp 723 Illustrated Lansing 1897

This report covers the year ending June 30, 1896, is well printed and on good paper A copious index adds very much to the usefulness of the volume, which is replete with data usually treated in such reports

Proceedings and Addresses at a Sanitary Convention held at Detroit, Mich , Dec. 9 and 10, 1897 Paper Pp 160 Illustrated Lansing 1898

This volume is a supplement to the report of the Michigan State Board of Health for 1898 and contains, among others, the following papers "Germs, What They Are and how They Produce Disease," "Isolation and Disinfection of Persons and Things," "The Needs for and Value of Public Health Work," "Popular Education in Sanitary Science," "Diphtheria and Scarlet Fever, their Restriction and Prevention," "Streets and Alleys and their Relation to the Public Health," "Typhoid Fever and the Water-Supply of Detroit," "Bicycling—from Social, Business and Healthful Standpoints," "The Restriction and Prevention of Tuberculosis"

Transactions of the Vermont State Medical Society 1897 Cloth. Pp 224. Published by the Society, Burlington, Vt , 1898

This volume contains the transactions of the annual meeting at St. Albans,Vt., Oct 14 and 15, 1897, comprising the following papers "Tumors of the Breast," "Carcinoma of the Female Breast," "Modern Management of Diphtheria and Croup Cases," "Electrotherapeutics," "Higher Medical Education;" "Osteitis Deformans," "Paranoia," "Significance of Post-climacteric Hemorrhages," "Infantile Scorbutus," "Uterine Curette in the Country," "Cancer of Uterus," also the medical laws of Vermont, etc The volume is a credit to the society

PUBLIC HEALTH

Health in Michigan —The State Board of Health reports, for June, the five most prevalent diseases as rheumatism, neuralgia, bronchitis, tonsillitis, influenza Compared with the preceding month, diarrhea, remittent fever and measles increased in prevalence, and pneumonia, influenza and pleuritis decreased

Sterilized Lymph —We are so used to the phrases "arm to arm vaccination" and "lymph direct from the calf," and to the preference shown to "fresh over stored lymph," that to most persons in England it would be a revelation to learn that no lymph is used in Germany until it has been kept four months under observation Taken with the strictest antiseptic precautions, mixed with definite proportions of glycerin and sterilized water, the instruments and vessels being all absolutely aseptic, it is stored in sealed tubes and kept at fixed temperature until under the inhibiting influence of the glycerin, the extraneous microbes swarming in ordinary recent lymph have died out, the specific micrococci being unaffected and multiplying in the absence of other forms This process of elimination of the foreign microbes and pure culture of the specific organisms occupies three or four months, and no lymph is sent out containing more than one or two harmless bacteria or torulæ in the cubic centimeter, most of the samples being absolutely free —*Practitioner*

Acute Primary Diphtheria.—The *Lancet*, April 30, comments upon the paper on membranous stomatitis of Dr Jurist that appeared in this Journal, March 19, and adduces a similar case reported in a French journal by Dr Thiercelin This latter case was regarded as one of true primary diphtheria of the mouth The patient was an adult female who complained of pain on opening the mouth and had anorexia and a little fever The lower surface of the tongue, which was not swollen, and the floor of the mouth were covered with a whitish gray membrane There were membranes on the cheeks, gums and lower lip The disease did not extend beyond the pillars of the fauces The submaxillary lymphatic glands were swollen, mastication was impossible, and intense fetor and salivation were present Diphtheria bacilli were found in abundance in the membrane M Sevestre and M. Gaston have reported a series of cases of membranous stomatitis which constitute a special form, denominated by them "stomatitis impetiginosa" It attacked debilitated children, especially those recovering from measles or whooping cough A whitish adherent membrane similar to diphtheritic exudation formed The tongue was rarely attacked In nearly all cases the disease was associated with impetigo of the face The staphylococcus pyogenes aureus was found in every case

Actinomycosis of the Lungs.—Before the Berlin Medical Society, Dr Karowski said the disease appeared in two forms One of these, the catarrhal form, was due to the germs establishing themselves on the surface of the bronchial mucous membrane, the result being a chronic catarrh of the bronchi with actinomyces present in the sputum The other form, the destructive one, was of a much more serious character and presented three distinct stages, in the first of which the germs entered into the deeper strata of the bronchi, producing there a destructive peribronchitis At first the illness is not attended by any well marked symptoms and it may often be taken for tuberculous phthisis, but the absence of tubercle bacilli and the appearance of actinomycosis fungi in the sputum may establish the diagnosis Moreover, the area of dulness on percussion is not at the apex of the lung, as in tuberculosis, but is below the clavicle In the second stage the fungi have come from the lungs to the pleura, producing there a hemorrhagic exudation A swelling of the thoracic wall as in empyema is very characteristic The purulent accumulation may discharge itself either through the skin or through the diaphragm In the third stage there are metastatic formations in different parts of the body, together with symptoms of general septicemia These cases are hopeless Dr Karowski then showed a patient who had been sent to him for an alleged sarcoma of the pleura There was well marked dulness of the right side and by puncture the presence of actinomycosis was ascertained An incision was made in the fifth intercostal space, a portion of the sixth rib was resected, the affected skin and muscles were freely removed, and the resulting large cavity was cauterized with Paquelin's thermocautery and dressed with iodoform gauze The patient was profoundly collapsed after the operation, but eventually recovered At the present time, three months after the operation, he still has a fistula, but actinomycosis fungi are no longer found in the discharge, the cough is only very slight and the patient has increased in weight five kilos (eleven pounds) Cases of pulmonary actinomycosis which have been successfully operated on are very rare, but would certainly become more frequent if an early diagnosis were possible —*London Lancet*, April 23

The Care for Revaccination in England —Dr Bond of Gloucester, England, has prepared for the Jenner Society a minute of the paramount needs of his fellow citizens for the stamping out of epidemics of smallpox It is his belief that the experience of every recent English epidemic of that disease in his country, shows conclusively that if we wish to protect the community against these increasingly frequent scourges, we must take as much trouble to promote revaccination as we have hitherto taken to promote infancy vaccination "So long as the public are led to believe, as they have hitherto, that vaccination in infancy is the only thing about which the State need take any care, so long will the epidemics of so called "vaccinated" adolescents and adults, and of unvaccinated or badly vaccinated children be the approbrium of our country There is only one way of effecting this, and that is by requiring, so far as is practicable, every child who enters a school to be efficiently vaccinated, and that before it leaves school it shall be equally efficiently revaccinated It is to the revaccination of her adolescent population that Germany owes the remarkable immunity from epidemics of smallpox which she has for the last twenty years enjoyed, rather than to her compulsory vaccination in early childhood For it is the adolescents and adults whose early protection in infancy has become attenuated by age who are most exposed to the risks of smallpox. If we could secure their protection by revaccination at the end of the school age, as well as that of the children at the commencement of it, we need not trouble ourselves much about the infants We have been misled in this respect by false inferences from the experience of Jenner and the early vaccinators When infants were the chief sufferers, because the adult population was in a large degree protected by having had the disease, the discovery of a means by which these unfortunate little victims could be almost absolutely protected naturally led to an undue estimate of the value of infant vaccination, especially as its effects were assumed to be more lasting than they really are But we have now to deal with altogether changed conditions Where infant vaccination is fairly well maintained, as it has been in Middlebrough, it is the adults who have not been revaccinated who are now the chief source of danger, a danger which can only be avoided by investing every young person with the same degree of protection which we have for the last half century conferred upon the greater portion of our infant population These observations are germane to the position of our badly protected communities The occurrence of a case of smallpox in one of our Southern camps of the army of invasion into Cuba, teaches us that we are ourselves "traveling on thin ice" It is all very well to regard the regular forces as practically immune against smallpox, but there is a host of camp followers, attendants, etc , over whom there is little official control, and in it is a mass of inflammable material only awaiting the horrid variolous spark to light up an epidemic. The medical authorities at Washington would do well to declare what steps have been taken by them to protect the army and navy against smallpox

NECROLOGY

T E Murrell, M D , Professor of Ophthalmology in the Barnes Medical College of St. Louis, Mo , died June 20, at Denver, Colo , aged 48 years Dr Murrell was a graduate of the University of Maryland in 1873, and after two years of hospital work settled in Little Rock, Ark , where he established an excellent ophthalmic and aural practice, and won an enviable position in the profession. He was an active, scientific worker, contributing much to the Section on Ophthalmology of the American Medical Association In 1830 he was elected Secretary of the Section and three years later Vice-President of the Association. *In 1894 he accepted the chair of Ophthalmology in the Barnes Medical College*, and removed to St Louis Two years later he was compelled by failing health, to relinquish his work in that city, and since that time he has resided at various points in the western States and Territories His death was due to pulmonary hemorrhage

William Howard Bailey [illegible] a man of [illegible] in many lines, died at his home in Albany, N Y [illegible] He was born in Bethlehem, N Y December 2[illegible] being Dr Solomon Baile[illegible] was finally in 1853 graduated from the Albany [illegible] and began practice in [illegible] moved to Albany, where [illegible] He was most widely known [illegible] State Medical Society [illegible] 1881, after a service [illegible] a municipal reformer [illegible] many societies his [illegible] 1887, when he retired [illegible]

Joseph M. T[illegible] lyn, N Y , died [illegible] in Washington [illegible] moved to Brooklyn [illegible] near fifty years [illegible] physician, and [illegible] survivors.

William [illegible] Reading, [illegible] of the Ca[illegible] for some [illegible]

David [illegible] died the [illegible] widely [illegible] daugh[illegible]

Lo[illegible] line [illegible] Sabl[illegible] John [illegible] nat[illegible] U[illegible] to [illegible] last spring was made an associate professor in pathology He was on his way to study at the University of Strasburg

A L MICHAELS, M D , Kansas City, Mo , died June 29, from inflammation of the membranes of the brain complicated with pneumonia Born in Illinois in 1854, he was graduated from the normal school at Valparaiso, Ind , in 1872, and was Professor of Natural Sciences in that institution for two years He then studied medicine at Louisville, Ky , and later took a post-graduate course at Starling Medical College In 1894 he was appointed Professor of Electro Therapeutics in the College of Physicians and Surgeons, Kansas City, Kans , which position he held at the time of his death

WILLIAM H DECAMP, M.D , Grand Rapids, Mich , died July 4 He was born in Auburn, N Y , in 1825 and during the Civil War was commissioned surgeon of the First Michigan Regiment of engineers and mechanics, serving three years In the Grand Rapids Medical Society as well as in the State Medical Society, he has filled the position of President

A E FARNHAM, M D , Pittsfield, Me , July 2, aged 42 years ——Aretus C Haynes, M.D , Kansas City, Mo , June 29, aged 55 years ——H C Himoe, M.D Albuquerque, N M , July 3 ——Peter Hooper, M D , Philadelphia, Pa , July 1 ——Edward D McDaniel, M D , Coy, Ala , died in Denver, Col , June 27, aged 76 years ——Samuel McNair, M D , Kalamazoo, died at Elburn, Ill , June 30, aged 75 years ——H R Nichols, M D , Osage, Iowa, June 23 ——W C Glines, M D , Norwalk, Conn , June 27, aged 73 years ——N C Cowgill, M D , Logansport, Ind , June 26 ——T Archibald Taylor, M D , Washington, D C , June 30

DEATHS ABROAD —Cornelius Herz, M.D , according to the press despatches from London died at Bournemouth, Eng , July 6 He was born in Besancon, France, September 3, 1845 His father was a German Jew, while his mother was French His parents removed to England when he was quite young, but after a short time the family came to New York city He was graduated from the College of the City of New York with the class of '64, and afterward received the degree of M S , from his alma mater After an apprenticeship in the hospitals of that city he was sent to Heidelberg to study medicine He continued his studies at Munich and Vienna, and finally at Paris He was poor and unknown, but brilliant, versatile and audacious, just the man to succeed in the French capital, and so, by giving lessons in English and French and writing for the French newspapers, he was able to go on with his studies and receive his medical diploma In 1870 he became Assistant Surgeon General to General Chanzy's Army of the Loire and for his services received the Cross of the Legion of Honor The Franco Prussian war over he returned to America and married in New York Bianca Saroni a cousin of the poet Heine The couple having soon settled in California he appeared as a member of the San Francisco Board of Health. It was there also that he started on his career as an electrician, and founded the electrical works which are still the pride of the city In 1877 he went with his family to Paris and started on a brilliant career He overthrew the gas monopoly, and provided the main thoroughfares with electric light He founded the leading electric journal of the world, *La Lumière Electrique* He established the telephone system of France, organized the first electric exhibition that was ever held, and finally became associated with the Rothschilds in putting into practice the theory of the transmission of force by electricity At the same time he rapidly became a great social and political figure in the Republic. He was successively raised from the rank of Knight of the Legion of Honor to that of Commander, and, finally, when he was only 40 years of age, to that of Grand Officer And such men as Chanzy, Gambetta, Ferry and De Freycinet were his sponsors at each promotion. He just missed receiving the Grand Cross of the Order of SS Maurice and Lazarus of Italy Crispi signed his brevet shortly before he fell, and Rudini, who succeeded him, canceled the letters patent, which are still in the archives of Consulta. For years his income was large, and his entertainments were princely, while his charming manners and magnetic personality made him a great social favorite When in 1892 the Panama bubble burst, Dr Herz went under, and was charged with being implicated in the scandal When the exposures were first made he fled to London, but was arrested under extradition proceedings on a warrant from the French Government charging him with fraud and embezzlement. As he was confined to bed, he was unable to appear in court The case was kept open, and he was continued under arrest in his bed from 1893 to 1896 By special act of Parliament the magistrate was permitted to attend his bedside and take testimony The magistrate promptly declared that the charges were utterly invalid and scarcely deserving of notice, and Herz was released May 2, 1896 Meanwhile the French Government had instituted numerous proceedings against him and confiscated all his property As he claimed that this was persecution and that he had been injured in name and health, he demanded of the State Department as an American citizen that it prefer a claim for $5,000,000 against the French Government. The matter is still under advisement Nordau is said to have called attention to many stigmata of degeneracy in Herz's person but the profession scarcely claims Herz, as at no time did he more than practice medicine as a minor specialty He frequently expressed a contempt for its emoluments ——Leandro Urrecha, M D , Madrid, a distinguished obstetrician ——Dr Gustav, member of the Imperial Council and of the Chamber of Deputies of Austria, aged 59 years ——Johannes Alexander Garten, *privat docent* of surgery in Leipsic——Prof Frederic Jacob Trier, Copenhagen ——Dr Dezaneau Angers ——Dr Neudoerfer, *privat-docent* of surgery in Vienna ——Prof T Eimer, Tubingen——F A De Zenker, professor of pathologic anatomy at Erlangen , "noted for his discovery of trichinosis in man "——Carl v Rokitansky, professor of gynecology at Graz, aged 51 years ——K. E With, professor of internal medicine at Copenhagen ——Dr Fr Kretschy, lecturer on internal medicine in the University of Vienna, aged 50 years.

SOCIETY NEWS

New Jersey State Medical Association —At the annual meeting held in Asbury Park, June 28, 29 and 30, the following officers were elected President, C R. F Fisher, Bound Brook , first vice president, L M Halsey, Williamstown , second vice president, William Pierson, Orange , third vice president, J D McGill , corresponding secretary, E L B Godfrey, Camden , recording secretary, W J Chandler, South Orange , treasurer, Archibald Mercer, Newark We will publish a report next week

Canadian Medical Association —The thirty first annual meeting will be held in Laval University, Quebec, August 17, 18 and 19, 1898 There will be the usual fare and a third rate, on the certificate plan Arrangements made so that members' families may take side trips at a trifling cost J M Beausoliel, president , F N G Starr, gen secretary, 471 College street, Toronto

International Association of Railway Surgeons —The eleventh annual meeting was held in Toronto, Canada, July 6, 7 and 8, 1898, under the Presidency of Dr George Ross of Richmond, Va The following officers were elected for the ensuing year

President, Dr Bruce L Riordan of Toronto , treasurer, Dr E R. Lewis of Kansas City, Mo , secretary, Dr Louis J Mitchell of Chicago The vice presidents of the Association are Drs R E L. Kincaid of Bonham, Texas, James G Hunt of Utica, New York , James L Foxam, Huron, South Dakota , W Gunn of Clinton, Ontario , Hugh H McKnight of Hartford, Conn , C F Leslie of Clyde, Kansas , Hugh M Taylor of Richmond, Virginia

The place of next meeting was left to the Executive Board to decide between White Sulphur Springs, Virginia, and Richmond, Virginia

MISCELLANY

Dr Grandy Is Made Surgeon —Dr Luther B Grandy, a most prominent and popular physician of Atlanta, was recently appointed by Governor Atkinson surgeon of the Third Regiment, Georgia Volunteers Dr Grandy will rank as major and will have under him two assistants, each of whom will hold the rank of captain —*Atlanta Constitution*

Hospital Ship for Manila —At the suggestion of Mrs Greenleaf, wife of the surgeon in chief of hospitals in the field, the Red Cross League has undertaken to start the collection of $300,000 for the purchase of a hospital ship for the troops at Manila The plan is to raise this sum by popular subscription in all the States west of the Rocky Mountains and then present the ship to the government.—*Times Herald*, Chicago

Kindness to the Wounded War Horse —With a view to avoid extreme suffering among wounded horses or mules on the field of battle, it has been ordered by the Major General commanding the Army that a veterinary surgeon, or some other person detailed by the commanding officer, will accompany troops in an engagement, whose duty it will be to put an end to the agonies of all horses or mules that in his judgment are suffering to a degree requiring such action on his part

Examination of Physicians to Fill Vacancies in Volunteer Regiments —The Secretary of War has adopted the recommendation of the Surgeon General that when a physician has been appointed by the governor of a State to fill a vacancy in one of the regiments mustered into the United States service, the physician appointed should be examined by a board of three physicians appointed by the governor and without expense to the United States The certificate of this board that the candidate has passed a satisfactory physical and professional examination be accepted by the War Department as evidence of his fitness for the place to which he has been appointed

The Physical Examination of Recruits —Comments on the fine physique and splendid development of the men in the Volunteer Army have been of frequent occurrence in our newspapers owing to the strict examination to which the men were subjected prior to muster into the service We referred to this subject in our editorial of May 7, showing how large a percentage of men who considered themselves fit to be soldiers were rejected by the recruiting officers of the regular army It now appears that quite a number of volunteers with serious defects were passed at the examinations a few weeks ago, owing probably to the hastiness and feverishness of the mustering in procedures In the recent transfer of men from the line to the hospital corps to fill up the latter an examination into the physical condition of the candidates was required by regulation and in conducting these examinations the medical officers representing the hospital corps rejected so many and for manifest cause that the attention of chief surgeons of corps and divisions was invited to the subject with the view of eliminating from the ranks all men unfit for service on account of disqualifications existing prior to enlistment. This will increase the percentage of rejected recruits still further and will no doubt lead to greater care and strictness on the part of medical men on duty at recruiting stations and mustering camps

Analysis of Water Supplies for Army Camps.—From Washington, D C , we learn that if, in the establishment of camps of organization and instruction or other comparatively permanent camps, it is deemed necessary to have a sanitary analysis of the water supply made in the laboratory of the Surgeon General's Office Chief surgeons are authorized to forward samples by express to Deputy Surgeon General Smart, Army Medical Museum, Washington, D C , and are required to send a communication to the Surgeon General, giving an account of the source and the sanitary surroundings of the water Not less than half a gallon should be sent as a sample Care should be taken that the containing vessel is perfectly clean Any vessel which requires chemicals to clean it should not be used It should be cleaned by filling several times and washing with water from the source which is to be sampled Wickered glass demijohns, otherwise unprotected or clear glass bottles, boxed with packing, should be used in preference to stoneware jugs or other vessels of opaque material Care is suggested also that the corks used be new and clean, for a cork tainted with any oxidizable substance, particularly alcoholic or saccharine liquids, destroys the value of the water sample for the purposes of analysis

Red Cross Literature —The war is bringing forth a crop of booklets decorated with the Red Cross of the Geneva Convention Two such have come to our notice during the past week The first is a "Stretcher Drill" by Surgeon Major J J de Zouche Marshall, of the 3d V B East Surrey Regt., published by permission of Her Majesty's Stationary Office This is an excellent little manual of its kind, but there is no room for it in this country notwithstanding the recent expansion of our military forces, as the "Drill Regulations for the Hospital Corps," published by the U S Government for the use of the troops, answers all our purposes It is to be observed that the latter suffers in no way by comparison with the new English production We discarded the fixed sling several years ago and our regulation litter weighs only a little over sixteen pounds while that carried by the British Red Cross soldier weighs thirty two pounds The second is "Antiseptic Methods as Applied in Active Military Field Operations," translated from the French of E Forgue, Surgeon French Army, by Professor Louis Bazet, President San Francisco Polyclinic, and published for the use of Sanitary Corps of the National Guard, State of California by direction of Colonel Wm E Hopkins, Surgeon General It insists on asepsis in the field at the first dressing and ambulance stations by the free use of boiled water

Army Health Reports of Troops in the Field —On inquiry at the office of the Surgeon General of the Army we find that satisfactory reports for the week ending June 25, have been received from the Corps encamped at Chickamauga, Ga From the 1st Army Corps the Chief Surgeon, Lieutenant Colonel Huidekoper, reported that the three division hospitals have been completed, with cots for 150 patients in each, and are doing effective service, although they do not yet have their complement of Hospital Corps men as attendants The reserve ambulance company has been filled up, and the reserve field hospital started in connection with it has been used as a receiving station and a training school for men transferred to the hospital corps from the line The general health is excellent, less than 1 per cent. absolutely sick, and less than 3 per cent. when all the trifling cases excused from duty and held in quarters are included Reports from Lieutenant-Colonel Hoff, Chief Surgeon of the 3d Army Corps, show a small sick list in most of the regiments, although many men have been taken upon this list on account of vaccinia in its ordinary progress Three of the regiments have relatively a large number on sick report These are the 1st and 2d Arkansas and the 1st Mississippi Infantry The diseases are chiefly malarial, and their prevalence is referred to the exposures incident to a change to an elevated location in the case of men who came from malarial districts Lieutenant-Colonel L M Maus, Chief Surgeon of the 7th Army Corps, Major General Fitzhugh Lee, commanding, reported that during the week ending June 25, the camps of the Corps at Jacksonville, Florida, were in excellent condition The grounds are policed regularly, and ditches have been dug to carry off surface water The sinks have been provided with half barrels, and tubs containing saw dust are used as urinals The water supply is abundant and of excellent quality, from artesian wells The bathing facilities are superior, shower baths have been constructed under temporary frame shelters for all the regiments No trouble has been experienced in this command about rations or cooking, Hunt and Buzzacott ovens have been provided for all the battalions The health of the men continues good Occasional cases of disease occur, such as diarrhea, colic and debility from relaxing climatic influences Lieutenant Colonel A C Girard, Chief Surgeon 2d Army Corps at Camp Alger, Virginia, reported that the deficiencies of supplies is gradually being remedied The non effectives have constituted 6 per cent of the strength, chiefly due to vaccination The prevalence of measles is abating The water supply is good and is becoming plentiful on account of the sinking of deep wells The efficiency of the division hospitals is improving, and the ambulance companies are being filled up by transfer from the line, the hostility to these transfers on the part of volunteer officers and men is passing away

Camp Notes From the Army Corps —From the 2d Army Corps, Camp Alger, Virginia, it is reported that during the week ending July 2, the non efficiency from sickness constituted three per cent. of the strength Typhoid fever seems to be on the increase, and is believed to be due to the use of well waters on the farms in the neighborhood of the camp The deep wells of the regiments give a pure supply Deputy Surgeon General Smart has been directed to make a careful inspection into the sanitary condition of the camp, giving special attention to the water supply and to the etiology of cases of typhoid fever occurring in the command Colonel A C Girard, Chief Surgeon, has issued an order for the daily instruction of volunteer medical officers, but it can not be carried out systematically, as Major John L Philips is the only regular medical officer with him, and both are worked to their full capacity in organizing, equipping and attending to sanitary matters According to Lieutenant Colonel Maus, Chief Surgeon 7th Army Corps, the water supply of that Corps at Jacksonville, Fla, is from a system of artesian wells It is pure, healthful and abundant, and although saturated with hydrogen sulphid when freshly drawn this speedily escapes after exposure to the air Colonel Maus considers it as good as any that could be obtained anywhere, and does not think it necessary to send any of it to the Surgeon General's office for analysis Some difficulty has arisen about the disposal of excreta It appears that the city authorities of Jacksonville objected to the pit system used in the Camp, whereupon the Chief Surgeon recommended that if it could not be disposed of by a crematory, it should be hauled to a convenient place on the main sewer where a suitable manhole is provided with a hopper and allowed to escape to the river with the city sewage

A Temperance Order from Army Headquarters —Major General Miles, commanding the Army, has issued general orders under date July 2, 1898, enjoining commanding officers to restrict or prohibit the use of wines and beer in their camps, and urging example as well as precept upon all officers in the interest of health and efficiency The orders read as follows

> The Army is engaged in active service under climatic conditions which it has not before experienced
>
> In order that it may perform its most difficult and laborious duties with the the least practicable loss from sickness, the utmost care consistent with prompt and efficient service must be exercised by all, especially by officers
>
> The history of other armies has demonstrated that in a hot climate abstinence from the use of intoxicating drink is essential to continued health and efficiency
>
> Commanding officers of all grades and officers of the medical staff will carefully note the effect of the use of such light beverages—wines and beer—as are permitted to be sold at the post and camp exchanges, and the commanders of all independent commands are enjoined to restrict, or to entirely prohibit, the sale of such beverages, if the welfare of the troops or the interests of the service require such action
>
> In this most important hour of the Nation's history it is due the Government from all those in its service that they should not only render the most earnest efforts for its honor and welfare, but that their full physical and intellectual force should be given to their public duties, uncontaminated by any indulgences that shall dim, stultify, weaken or impair their faculties and strength in any particular
>
> Officers of every grade, by example as well as by authority, will contribute to the enforcement of the order

Organization of Ambulance Companies —As showing the system of organization of ambulance companies for duty in connection with field hospitals in the army as a whole, the following regulations published from headquarters of the Seventh Army Corps, Gen Fitzhugh Lee, at Jacksonville, Fla, on the recommendation of Lieutenant-Colonel Maus, Chief Surgeon of the Corps, may be cited The personnel of each division ambulance company of this corps will consist of three medical officers, seven hospital stewards, three acting hospital stewards and 104 privates, which will be under the command of the ranking medical officer assigned to duty with it, who will be held responsible for its discipline, instruction and management. He will make requisitions on the chief surgeon of the corps for the necessary pouches, drill regulations and blanks He will also submit requisitions for the necessary litters, camp equipment and ordnance supplies without delay to the chief quartermaster and ordnance officer of the division Rations for the division ambulance companies will be drawn as ordered for line organizations The division ambulance companies will be given daily instructions in marching, litter drill, loading and unloading litters, improvisation of litters, method of removing wounded without litters, placing patients on horseback, the use of the travois, two horse litters, the preparation and use of ordinary wagons and other vehicles for the transportation of the sick and wounded, ambulance drill, inspection and muster of the detachment, tent drill, packing, packing hospital and orderly pouches, and the clothing roll Regular daily instructions will be given in first aid to the wounded and medical emergencies. Directions as to the scope of first aid and medical emergency instruction, will be submitted by the chief surgeon of the corps An ambulance will report daily after surgeon's call at each regiment to remove to the division hospital all cases designated by the regimental surgeon for hospital treatment Men who become injured or are taken ill after surgeon's call, and requiring hospital treatment, will be reported to the surgeon in charge of the division hospital, who will have them removed as soon as possible Medical officers assigned to duty with each regiment will attend surgeon's call and those men undergoing treatment in quarters, render emergency aid when needed prescribe for those not on sick report requiring medicine for slight ailments and look after the sanitary condition of the regiment They will be furnished pocket cases, first aid packages, bandages, tourniquets and all medical supplies needed for the thorough performance of their duties, also one orderly and one hospital corps pouch All assignments of medical officers, hospital stewards, acting hospital stewards and privates detailed for duty with the corps and division hospitals, litter bearer and ambulance companies and regiments will be made by the chief surgeon of the corps Departures from the assignments of medical officers and members of the hospital corps as set forth above will be temporarily made by the chief surgeon from time to time to meet the exigencies of the camp or battlefield

Assignments, etc, of Medical Officers —To the 1st Corps General J R Brooke at Chickamauga Ga Majors Calvin H English and John P Dodge, Brigade Surgeons and the following Acting Assistant Surgeons Gerry S Drever from Chicago, Illinois, George K. Sims from Richmond, Virginia, Wm H. Haskin from New York City, David Baker from Fort Thomas, Kentucky, H A Glatzmayer from the General Hospital at Fort Myer, Virginia, and Charles S Stern from Hartford, Connecticut. To the 2d Corps, General William H Graham, Camp

Alger, Virginia Major Joseph K Weaver, Brigade Surgeon To the 3d Corps, General James F Wade, Chickamauga, Georgia Majors Frank Bruso and Charles M Drake, Brigade Surgeons To the 4th Corps, General J J Coppinger at Tampa, Florida Majors Schuyler C Graves and Samuel T Armstrong, Brigade Surgeons, Lieutenant Carl R Darnall, Assistant Surgeon U S A, whose orders to join General Shafter's Corps have been revoked and the following Acting Assistant Surgeons' J W Donnelly, Stephen M Long, D T Laine, R Fleming Jones and Robert Boyd To the 5th Corps, General W R. Shafter at Santiago, Cuba Lieutenant Colonel Nicholas Senn as Chief Surgeon of the Operating Staff and Acting Assistant Surgeon Harry S Greenleaf To the 7th Corps, General Fitzhugh Lee at Jacksonville, Florida, Majors George B Bunn, George R. Fowler and John R McDill, Brigade Surgeons To the 8th Corps, General Wesley Merritt, Philippine Expedition Major Samuel O L Potter, Brigade Surgeon To the General Hospital at Fort McPherson, Atlanta, Georgia Majors Willis Z McDonald, Brigade Surgeon To the General Hospital at Fort Monroe, Virginia Major Donald Maclean, Brigade Surgeon and Acting Assistant Surgeon Eugene H Hartnett To the Leiter Hospital at Chickamauga Park Acting Assistant Surgeon Henry R Carter, Jr, from New Orleans, Louisiana To the General Hospital at Key West, Florida Acting Assistant Surgeons Charles Boyd from Macon, Georgia, and Robert C Eve from Augusta, Georgia *Resigned* —Major Otis H Marion, 6th Mass, Infantry Volunteers *Nominations* —Charles P Pollard of Alabama as Assistant Surgeon of the 5th Regiment Volunteer Infantry, George E Lyon of Missouri as Surgeon of the 3d Regiment of Volunteer Engineers and Julius R Shnelke of Wyoming, and John H Gibbon of Pennsylvania as Assistant Surgeons of the same regiment, Walter D Webb and Charles I Proben of New York as Assistant Surgeons of the 1st Regiment of Volunteer Engineers *Nominations confirmed* —Wm W Purnell of the District of Columbia and Joseph L Bell of Illinois to be Assistant Surgeons of the 8th Regiment of Volunteer Infantry, and Julius A Schnelke of Wyoming to be Assistant Surgeon of the 3d Regiment Volunteer Engineers

The Field Medical Service of the Second Army Corps —Lieut Col A C Girard, chief surgeon, Second Army Corps, Camp Alger, Virginia, explains the contemplated work of the Medical Department as follows

The Medical Department in camp —The largest unit of hospital administration is to be the division hospital, if a brigade is separated permanently it will be a brigade hospital, if a regiment is separated permanently it will be a regimental hospital The regiment in camp is entitled to one medical officer one hospital steward, one orderly and one orderly for each medical officer, to carry the pouch, when on duty The orderlies are detailed from the hospital company at the division hospital and for greater convenience should be assigned to the regiment for rations The other medical officers and hospital stewards of the regiment do duty with the regiment unless detailed by the division commander, on the recommendation of the chief surgeon of the division, with the field hospital The usual duties of regimental medical officers are Attending sick call and sanitary duties The senior medical officer will prepare the morning report of sick for the adjutant of the regiment and send a copy of it to the brigade surgeon

For the purpose of caring for the sick in quarters with the regiment the government provides medical chests Nos 1 and 2, one orderly pouch for each medical officer, one hospital corps pouch for the orderly, one surgeon's field case for each medical officer, one field desk two litters and two lanterns As these supplies have not all been received, owing to failure of contractors, improvisation had to be resorted to The troops which have left for Cuba however, have been equipped with the regulation supply, with the exception of the surgeons' field cases, which have not been received Sufficient field cases (surgeons') have been obtained from well equipped regiments in this camp and the departing troops have been supplied with at least one for each regiment. This method will be continued until a sufficient supply of field cases is received They are scarcely necessary in war time and have been principally devised for duty with small commands in Indian warfare In actual war major operations are not performed by regimental surgeons but by the operating staff of division or brigade hospitals, and for minor operations the instrument case in the orderly pouch is sufficient. The sick of a regiment which can not be treated in quarters or with the means furnished to its medical department are sent to the division hospital

Hospital service —The hospital service for a command in the field is performed for the highest military unit by the division A division hospital is established on the basis of 200 beds, the supplies for it or for its lesser units are provided for in the field supply table; tentage, transportation, ambulances and other equipments are obtained from the quartermaster department. The hospital is in charge of a medical officer detailed for the purpose, preferably a brigade surgeon or senior regimental officer of the command, who has for his staff an executive officer and a recording officer The wards usually consist of twenty four beds in four tents, each of which is under the charge of one or more medical officers, according to the gravity of the cases The quartermasters and ordnance equipment will, under General Orders 76, War Department, be under charge of the two line officers detailed for the purpose

The ambulance company —The *personnel* of the division hospital, aside from the officers enumerated above, consists of as many hospital stewards as may be needed, detailed by the division commander to the division hospital from regimental hospital stewards Privates of the hospital corps are either enlisted for that duty or transferred from regiments, the ratio of 2 per cent. of the command being the basis These men are formed into a hospital company consisting of 196 men, under the command of a medical officer with three subordinate medical officers The company is divided into three sections composed, as far as practicable, of men transferred from regiments forming the brigade Each section is divided into three sub sections composed of men transferred from respective regiments, in order that if a division hospital is in active service or changing station, or is divided into brigade or regimental hospitals, the men coming from each brigade or regiment will accompany their own organization Each section will be further subdivided in conformity with its duties, one half will be for duty in the division hospital, the other half will man the ambulance company, act as watchmen, accompany the regiment on the march, etc

This establishment will be under the control of the chief surgeon of the division, who will receive his orders from the division commander in matters of military control and administration

Medical service on the march.—When a command starts out on the march, each regiment will be supplied with three ambulances and its proportion of the hospital corps, from the ambulance service The medical officers allowed by law will march with the regiment as mentioned above The medical officers detailed by the division commander in division hospitals will march with the division hospital, if the hospital is to be moved, if not moved they will remain on duty with it. If any part of the command is permanently detached the division commander will order the medical officers and hospital stewards in division hospital to accompany the division hospital or its fractions, with its equipment

Medical service in battle —As soon as a regiment or command deploys for action, its medical department will wheel out of the way of the fighting force and be under the control of the senior officer present, who will assemble the detachments and ambulances in a place out of immediate reach of the enemy's bullets, preferably indicated by the military commander Each regiment will be accompanied into action by its senior medical officer for duty, with his orderly and hospital steward, who will keep station with the commander The division hospital will be located by the commanding General As soon as practicable without exposing the hospital corps and ambulances to unnecessary crippling the hospital corps, under command of the senior medical officer present, supplied with its litters, will commence the work of collection and assistance to the wounded who will be carried to the collecting station and thence to the division hospital or as a whole or in sections it will be advanced on the battlefield after an engagement.

The field hospital train —The field hospital train is on a basis of one ambulance to every 400 men and one wagon to every 600 (one third the allowance of wagons is added when four mule wagons are used) This transportation is under the direct control of the line officer detailed for the purpose and will be parked in the vicinity of the division, brigade or regimental hospital as the case may be The drivers of the ambulances will be privates of the hospital corps from the regiment to which they formerly belonged The wagon drivers will be civilians

When starting on the march the ambulances of each regiment will follow in the immediate rear of the regiment wi the detail of the hospital corps, and report to the senior surgeon of the regiment for instructions. The sick of the regiment requiring hospital treatment will be sent in the ambulance to the division hospital.

Dr. Frederick Holme Wiggin has recently been appointed, by the Commissioner of Public Charities of New York City, assistant visiting surgeon to Bellevue Hospital.

New Publications.—The *Medical and Surgical Monitor*, Vol. I, No. 1, June 15, 1898, issued at Indianapolis, and the *St. Louis Medical Gazette*, Vol. I, No. 1, June, 1898, are new monthly publications devoted to medicine and surgery.

Dry Labor.—Brodhead, in his service in the Sloane Maternity Hospital, has found that fully 15 per cent. of the women have labors which are strictly dry, "the accident" occurring nearly twice as often in multiparæ as in primiparæ. In the latter class the dry labor is usually more painful. He considers the dangers from this condition as dangerous to the child, i. e., asphyxia and meningeal hemorrhage, dangers to the mother, i. e., laceration of the soft parts, pressure necrosis, hemorrhage, sepsis, slower convalescence and possible rupture of the uterus.—*Med. Record*, May 14.

New Diagnostic Sign of Measles.—The value of Koplik's diagnostic sign (*vide* JOURNAL, vol. xxx, p. 1063) is confirmed by Libman in the *Medical Record* of June 11. His observations extend over fifty cases and in every case Koplik's sign was evident. He believes that "the mouths of children applying for admission to hospitals should regularly be examined for the measles spots." In addition to these fifty cases, the spots were observed in a number of dispensary patients, and in every case where the spots were evident, measles eruption was present or appeared within a few days.

Hemorrhoids.—Sims (*Maryland Med. Jour.*, May 7) advocates a new operative treatment applicable to the majority of cases of both internal and external hemorrhoids, also to other benign neoplasms of that region. With the patient in either the lithotomy or Sim's position, he introduces a speculum, divulses the sphincters as widely as possible by the instrument and with the thumbs stretches them until completely paralyzed. The piles now presenting themselves are everted as much as possible and the anal region irrigated with a 1 to 2000 bichlorid solution. On pulling out the tumors by forceps, the mucous membrane is cut through with a sharp scalpel around the base of the pile, and a silk ligature tied tightly in the groove made by the incision, including only the blood vessels and connective tissue. "The pile is then cut off close to the ligature, leaving only enough to hold it, and the cut edges of the mucosa are brought together over the stump with continued sutures of catgut." With external piles the same method may be used.

Large Doses of Carbolic Acid Given with Impunity.—Dr. Andrew H. Smith of New York says that in following out certain suggestions contained in an article in the *Lancet*, regarding the free administration of pure carbolic acid in scarlatina, he has been astounded at the enormous doses of carbolic acid that may be safely given to a person provided the acid used is pure. He also asserts that the occurrence of smoky urine, or "carboluria," is no cause for alarm, as it does not imply any diseased condition of the kidney, and is not accompanied or followed by albuminuria. He has given patients the enormous daily dose of two and one half drams of pure carbolic acid, diluted with water, and has kept this up for two or three weeks at a time without observing any deleterious effects from it. Of course, the urine of these patients was either smoky when voided, or became very dark after exposure to the air from oxidization of some of its constituents. These experiments, it need hardly be added, were not conducted for the purpose of satisfying an idle curiosity regarding what the human organism was capable of enduring, but with a view to a utilization of this, or some other similar antiseptic, in the internal treatment of various infectious diseases.—*Philadelphia Medical Journal*, April 23.

New Light on Malaria.—R. Koch, who has just returned to Germany, devoted much of his two years in South Africa to a study of tropical malaria, which he considers resembles in many respects the Texas fever of animals and is, like that, conveyed by an intermediate agent, the tick in one and the mosquito in the other, but he has proved that the contagion is transmitted in the eggs of each, as well as by the insect itself. His most important achievement is his discovery of the exact temperature curve of tropical malarial fever. The temperature first rises and remains at this height for about half the length of the attack, then falls somewhat, returning abruptly to its former height, where it remains for the other half of the attack, which lasts about thirty six hours in all, then rapidly falling to normal. The usual blind administration of quinin at regular intervals is absolutely useless. Quinin does not kill the plasmodium, it merely checks its development. We know now the exact moment when to administer it to produce the desired effect, which is the stage in the development of the plasmodium that precedes sporulation. *Quinin at the right moment cures tropical malaria even in its worst forms.* Koch confirmed this assumption in every case except two moribund. Draining swamps, planting eucalyptus, sanitoria, etc., are ineffectuel prophylactic measures. The only effective measures are to keep mosquitoes away and out of residences (there is an island off the coast which is free from mosquitoes, and malaria is unknown there), and send scientific physicians to administer quinin at the proper moment. He adds that ten to fourteen days must elapse after infection before the plasmodia accumulate sufficiently to produce an attack. He considers the quotidian form the manifestation of two superposed tertian forms. He found four varieties of tropical malarial fever, two very rare, the third is the kind experienced in temperate countries, which occurs in 10 per cent. of the cases there, and the fourth, or very severe kind, in 90 per cent. He is convinced that the problem of artificial immunity will be solved in time, reasoning from the natural inherited immunity of the coast negroes and the acquired immunity of the negroes who, coming from the mosquitoless mountains down to the coast, pass through a severe attack and are immune afterward, like animals who have passed through an attack of Texas fever in youth when it is usually mild.—*Deut. Med. Woch.*, June 16.

Blood Examinations.—Heiman, in the *New York Medical Journal* of May 7, writes concerning "Current Methods of Blood Examinations." He points out that malarial organs must be distinguished from nucleated red cells, degenerated red corpuscles, plaques, precipitation of dye and fungi developed in the aqueous solution of methylene blue. The point of practical importance when staining is to be sure of finding the characteristic brown pigment of the malarial organism. He considers malarial disease endemic in New York and vicinity, especially on the river fronts. The specimen is stained with eosin alcohol solution for five minutes, then washed well in water, dried with filter paper, counterstained with concentrated aqueous methylene blue solution for two minutes, again washed in water, dried with filter paper and mounted in balsam, when the specimen is ready for examination with an immersion lens. He finds the plasmodia, as a rule, in the cells stained light bluish, their various forms depending on the stage of the disease. They have a characteristic small, brown, granular pigment in the sterile form and are clumped up in the center or periphery in the spore form.

Surgery of the Stomach.—In the *New York Medical Journal* of May 7, Keen of Philadelphia, gives a somewhat detailed review of the various operations now performed on the stomach. He considers that surgery of this organ has been rendered possible: 1. By the discovery of antisepsis. 2. By experiments on animals He says "Had vivisection contributed nothing else to the progress of surgery, its services in the surgery of the stomach alone would be sufficient to justify it." He considers that gastrolysis has a somewhat restricted but still important field in gastric surgery, and that three indications exist for the operation of gastrotomy 1 For the purpose of removing foreign bodies, 2, in cases of stricture of the esophagus, and 3, for exploration, each of which indication he considers in detail He says "That gastrotomy for malignant diseases does not save life is self evident, but in preventing the patient from slowly starving to death, and in satisfying both hunger and thirst it is a most humane operation," and as it has relatively little danger, it can be commended even in desperate cases

Sea Water for an Artificial Serum is warmly advocated by Quinton, who states that a dog injected with more than his own weight of sea water showed no signs of any abnormal phenomena He has succeeded in keeping white corpuscles alive twenty eight hours in sea water, three times the length of life of the same corpuscles in the ordinary artificial serum Sea water must not be injected pure, or concentrated, but isotonic with the organic fluids The experiments of others that tend to opposite conclusions are unreliable, as the isotonicity was not borne in mind and the osmotic pressure was rendered unequal, thus producing mechanical disturbances incorrectly ascribed to intoxication —*Semaine Méd*, May 25

Movable Kidneys —Lichty reports twelve cases in the *Philadelphia Medical Journal* of May 14 Ten of these were of a decidedly nervous type, two of these had no nervous symptoms, one had sarcoma and the other disease of the kidneys causing displacement He believes that it is associated in all cases where there is a decided loss of weight, especially when it occurs with the symptoms of movable kidneys, put the patient on a line of treatment which will restore his normal weight He considers rest treatment very satisfactory for this, also exercises to strengthen the abdominal muscles His conclusions are that movable kidneys may be easily overlooked, and unless due to some disease in the organ itself, it is consequent to faulty nutrition and always accompanied by some nervous symptoms, that the treatment of such must be directed toward the correction of the faulty nutrition, the use of a supporting bandage being advised, if this does not bring about disappearance of the symptoms If the bandage brings about a disappearance of the symptoms and it later seems necessary to wear it continually, the patient should have a choice between this and a surgical operation If the symptoms do not disappear after the normal weight is gained, or after a thorough trial of the bandage, the kidney should be fixed permanently by operation If motility is due to disease in the organ itself, it should be removed early if allowable

Liability of Charitable Hospitals for Negligence of Nurses —A "private pay patient" was admitted to a charitable hospital to have a slight operation performed by her own private physician, who was also a visiting surgeon on the hospital staff After the operation was successfully performed she was carried to her room, while still under the influence of the anesthetic, and placed in a bed from which a hot, uncovered water bag had not been removed by the nurse in attendance To recover damages for the injuries sustained by her right leg thus being severely burned, she sued the hospital But Judge Cohen of the supreme court of New York holds, Ward vs St Vincent's Hospital, March, 1898, that she had no cause of action against the institution, though he suggests that she doubtless had a good one against the nurse who was the wrongdoer As he reads the cases, a public charitable hospital, which is doing no business for profit, but uses the money received from such pay patients as it has toward the support of the institution, which must still to a greater or less extent rely upon contributions of charitably disposed individuals, is liable only for negligence in the original selection of its servants and, having fulfilled that duty, it is not liable for the subsequent act of such servants, however careless or negligent, unless previous knowledge of unfitness has been brought home to the corporation Indeed, the judge thinks it may be doubted whether its liability extends beyond the selection of a competent head of the school of nurses connected with it. That the patient is a pay one, he does not consider changes the rule of liability, partly as it has been held in another class of cases that a charitable institution does not waive its exemptions because it charges some patients who are able to pay

Skill and Care Required of Dentists —Two distinct acts of malpractice were charged in the case of McCracken vs Smathers, one in originally filling a tooth upon a live nerve, without proper packing, and the other in improperly and unnecessarily boring through the jaw bone after the party suing for damages had returned for treatment Whether this malpractice, found by the jury, arose from the want of ordinary knowledge or skill, or the want of reasonable care on the part of the defendant, the supreme court of North Carolina says, March 15, 1898, is immaterial, as both are impliedly guaranteed by one offering his services to the public The degree of care and skill required, it holds, is that possessed and exercised by the ordinary members of the profession It need not be the highest skill and knowledge known to the profession, but it must be such as is ordinarily possessed by the average of the profession. It can not be measured simply by the profession in the neighborhood, as this standard of measurement would be entirely too variable and uncertain "Neighborhood" might be construed into a very limited area. It might contain but few dentists, in sparsely settled sections perhaps only one or two Both might be men of very inferior qualifications, and to say that they might set themselves up as the standard of a learned profession, and prove the standing of each by the ability of the other, continues the court, would be equally unjust to the profession and to its patients The words "the neighborhood," as used in this connection, it further suggests, are essentially different from the phrases, "the same general neighborhood" or "the same general locality," which are found in some decisions from other States But the supreme court expresses itself as satisfied with the instructions given the jury to the effect that the defendant would not be liable if he had exercised ordinary skill and care, and that, if he failed in either of these particulars, he would be responsible for the damages resulting from his own acts alone Judgment for plaintiff affirmed

Hypertrophic Pulmonary Osteo Arthropathy —In the *New York Medical Journal* of May 14 Hasbrouck reports a case of the above, previously there being but five cases in this country on record The patient was a male, colored, aged 55 years, a laboring man, and in April, 1896, a small swelling appeared just beneath the right lower jaw, grew slowly, then later enlarged rapidly and in March, 1897, involved the entire tongue and all the glands of the right side of the neck Respiration, deglutition and articulation were exceedingly difficult and the tongue could not be protruded beyond the lips, as the tumor mass pressed it well over to the left side of the mouth Later the enlargement affected the hands, feet and ankles until it was impossible for him to close his fists The knee and elbow joints did not take part in this enlargement, but the distal extremities of the ulna and radius of both arms did, as was shown by skiagraph, also the carpal bones From the skiagraph the enlargement seemed to be purely periosteal in formation, but unfortunately this could not be verified by postmortem In reviewing the cases he finds that in all but one case there has been some chest lesion, and in this one exception he believes a pulmonary disease was associated The patient died from general [illegible] ation, and the writer concludes that the in accordance with evidence from previous cases, it is due to some obstructive pulmonary lesion, this being substantiated by postmortem findings, where a hardened mass firmly binding the aorta, the esophagus and trachea into one solid body, in addition to the sarcoma of the mouth and the several sarcomatous areas in the right lung He also believes that had the primary condition been less malignant, giving the secondary more time, a much more typic condition of the feet and legs would have developed, as they were just beginning to share in the enlargement a few weeks before death

First Qualified Woman Physician in Europe—The first qualified woman physician in Europe, as far as is known, was a young Athenian woman named Agnodice In the year 300 B C, she disguised herself as a man and began to attend the medical schools at Athens, which it was against the law for a woman to do She afterward practiced among the women of Athens with extraordinary success Her secret becoming known, she was prosecuted for studying and practicing medicine illegally The Athenian women, however, raised so furious an agitation in consequence that the case was dropped and the law repealed Coming to later times, we find several women who obtained the degree of doctor of medicine and practiced in Europe before 1492, especially in the Moorish universities of Spain Trotula of Rugiero, in the eleventh century, had a European reputation and practiced in Salerno At the beginning of the fourteenth century Dorothea Bocchi not only received the degree of doctor but was professor of medicine in the University of Bologna Since then two other women have been professors of medical subjects in the same university, Anna Mangolini (anatomy) and Dr Maria delle Donne (obstetric medicine), the latter being appointed in 1799 In the year 1311 an edict was issued in France forbidding surgeons and female surgeons from practicing until they had passed a satisfactory examination before the proper authorities These female surgeons are again referred to in an edict in 1352.

Allows no Insurance for Septic Poisoning—In an action brought to recover on a policy of accident and life insurance the evidence tended to show that the insured, while suffering from some serious derangement of his system, which manifested itself, among other ways, by severe toothache, had two of his teeth extracted by a dentist, that there was a diseased condition of the membrane surrounding some of the teeth, and a general foul condition of the mouth, that the teeth were extracted in the usual way, but it caused a rupture of the upper maxillary artery, or a branch of it, from which a violent hemorrhage ensued, and to stop that the dentist plugged the cavities with cotton, that thereafter blood poisoning ensued from the absorption into the system of some chemic poison supposed to have been caused by the propagation of disease germs in the cotton, the seat of the affection being where the teeth were extracted, which blood poisoning progressed to a fatal determination Under these circumstances, the supreme court of Wisconsin reversed a judgment rendered against the insurance company It holds, March 22, 1898, Kasten vs Interstate Casualty Company, that, under a policy insuring a person against bodily injury sustained by external, violent and accidental means, with a provision for payment to a beneficiary or beneficiaries in case of death from such injuries within ninety days therefrom, independently of all other causes, and with a condition that the liability of the insurer shall not extend to injuries, fatal or otherwise, resulting wholly or in part from poison or anything accidentally or otherwise taken, administered, absorbed or inhaled, a death under such circumstances as above stated is within the condition set forth and creates no liability against the insurance company

Fracture of the Lower Extremities—Warbasse (*Annals of Surgery* for May) reports observations on the treatment of fractures of the lower extremity during two years, in the Methodist Episcopal Hospital of Brooklyn This fractures include 111 of the femur, 34 of the patella, 19 of the bones of the foot and 286 of the bones of the leg Of the 111 cases of fracture of the femur, 81 were discharged cured, 7 improving and 2 with soft unions, and of 70 cases of complete fracture of the shaft or neck in which the exact measurements were kept, there was no shortening in 36 cases, less than one fourth of an inch in 20 cases, from one fourth to one half inch in 8 cases, from one half to three fourths inch in three cases, from three fourths to one inch in two cases and two inch shortening in one case Both femora were broken in three cases and there were two cases of separation of the lower epiphysis In the majority of cases the treatment applied was the traction apparatus of Buck In 20 of the cases of fracture of the patella in which the joint was opened by incision over the patella, solid bony union was secured in all, the bone being united by silver wire sutures in twelve cases, by silkworm gut in five, by kangaroo tendon in one and by chromicized gut in one case In three cases where the patella was encircled by a subcutaneous suture, good fibrous union was secured In 27 operations in which the knee joint was opened and the bone fragment sutured, there was no septic joint disturbance Primary healing occurred in all cases and it was demonstrated in all of the recent transverse fractures that bony approximation would have been absolutely impossible without operation because of the intervention of blood clot and torn periosteum During the latter part of the decade drainage was used less than in the early part and the cases did equally well without it Lately a method of uniting the bones by chromicized sutures passed through the bone, suturing over these the periosteum with interrupted chromicized gut sutures, then closing the joint capsule by a continuous suture of fine gut, suturing the subcutaneous fascia in the same manner and finally closing the skin with a suture of silk, gave great satisfaction Of the 286 cases of fracture of the tibia and fibula, 136 were of the shafts of both bones of unspecified location, 28 of the shaft of the tibia and 21 of the shaft of the fibula of unspecified location, 8 of the upper thirds of both bones, 15 of the middle and 26 of the lower thirds, 4 of the upper third of the tibia, one of the middle and 13 of the lower third, 3 of the upper third of the fibula, one of the middle and 30 of the lower third Of these, 180 were simple fractures, 90 compound fractures, of which number 56 were compound comminuted and 5 simple comminuted In the 19 cases of fracture of the bones of the foot, 10 were fractures of the tarsal, 5 of the metatarsal and 4 of the phalanges

Colleges

The Medical Department of the University of Vermont graduated a class of sixty nine at the annual commencement, June 30 ——The graduating class of Bowdoin Medical School, Brunswick, Me, at the annual commencement, June 22, numbered thirty three

Hospitals

The new Finley Hospital was opened at Dubuque, Iowa, June 24.——Henry M Flagler has offered to the Red Cross all the necessary land and $5000 with which to build a hospital for the wounded just north of the Royal Palm Hotel, Miami, Fla He also offers the use of a new pier, upon which the hospital may be built, or it may be placed on adjacent land

Philadelphia

SPECIALIST IN TROUBLE—Miss Ella Moore, who has an office at 1228 Brown Street, recently treated a patient for a tumor, and on the patient's death the deputy coroner held a postmortem and found that cancer was the primary cause The woman, who claimed to be a specialist, was placed under arrest, and at the trial testified that she was in the employ of a firm on Walnut Street who prepared a salve which was said to be a specific for tumors It is further reported that the specialist who gave the treatment subsequently called in a physician, obtained money and then disappeared The woman died in terrible agony As the specialist's sign read "Doctor Ella Moore, Specialist," her case will be thoroughly investigated by the Philadelphia County Medical Society

University of Pennsylvania Advances —Physiologic chemistry some day will be one of the most important branches in the curriculum of all medical colleges Yale College deserves great credit for having already established this department and inviting the younger men to take hold of the work with great assiduity Correlated with this branch of medicine stands physiology and therapeutics, and the University of Pennsylvania has not been slow in finding this out, and hereafter students who graduate from that university will have some idea of the physiology of digestion, of electric appliances and of physiologic chemistry, for this department will be devoted to that work Since extensive college buildings for dental students have been erected, the room formerly occupied by them as an operating room or clinic will be partly devoted toward instructing students in experimental physiology In the new department Dr H C Wood will have his private laboratory for this study, and more elaborate experiments can be made than has formerly been the case Dr John P Arnold, a graduate of the university, class of '93, will have full charge of the laboratory for experimental physiology When these laboratories are completed they will be an improvement of which any college may feel proud

Etiology of Thermic Fever —The past week has been one marked by most depressing weather, there being hardly wind enough to turn a weather vane Indeed, the heat has never ceased and the humidity at times has almost gone to the saturation point June 25 was the hottest day up to that period, registering 94 degrees at 4 P M, with the humidity at 98 degrees, and ending with twelve prostrations Four days later the morning started off sultry and really seemed much hotter than the thermometer indicated, 88 degrees, but the humidity had risen to 90 degrees, resulting in nine prostrations for the day The mercury rose higher on July 1, registering 97 degrees, the humidity being 70, and causing sixteen prostrations July 3, according to the weather report, was the hottest day for that period in twenty eight years, the mercury rising to the century mark, and that on top of an elevated building, the Philadelphia postoffice The humidity was 70 degrees So far there have been reported seventeen prostrations, four of which resulted fatally The heat, the humidity and the velocity of the wind seem to be most important factors

Mortality Statistics —For the week ending July 2 there have been 555 deaths Of these, 284 were children under five years of age The number of deaths during the week is an increase of 168 over last week and 64 over the corresponding period of last year The principal causes of deaths were Cholera infantum, 114 deaths, marasmus, 28, heart disease, 27, consumption, 47, inflammation of lungs, 27, inflammation of stomach and bowels, 26, nephritis, 19, old age, 16, convulsions, 16, sunstroke, 4, uremia, 5, cancer, 12 The infectious diseases this week were Diphtheria, 56 cases, scarlet fever, 26 cases, typhoid fever, 10 deaths in 51 cases Last week the record was Diphtheria, 9 deaths in 49 cases, scarlet fever, 2 deaths in 40 cases, typhoid fever, 7 deaths in 79 cases

Appointment of Health Officer —Some time ago the Health Officer of Philadelphia, Dr Benjamin Lee, addressed a letter of inquiry to city solicitor John L Kinsey, in which he desired the information as to whether or not the appointments made by him should also be ratified by council Solicitor Kinsey replied that since the Board of Health had been a part of the Department of Public Safety of the Municipal Bureau, the appointments connected with the Board of Health would therefore come under the provisions of the act made applicable to the other various departments, and therefore, appointments made by the Health Officer would also have to be confirmed by select council

Injunction —Some time ago Messrs Edwin Chesterman and George M. Streeter filed suit against Isaac B Seeley restraining him from using that firm's name in business In the court of common pleas, Judge Pennypacker recently handed down the following decree "That the said I B Seeley is hereby enjoined from the use of the words 'Only Seeley' established since 1859, and impersonators,' and that all postal matter relating to the truss business addressed to Seeley's Truss Establishment with any address other than 1027 Walnut Street, or I B Seeley & Co , and also all letters or orders from customers of the old firm of I B Seeley & Co are to be delivered to the plaintiff "

Robert Boyd, M D , has recently been appointed assistant surgeon in the United States Army Dr Boyd will doubtless make a valuable addition to the corps of physicians already there, on account of his knowledge of the diseases of Cuba, he having at one time resided there Dr Boyd will report for duty at Tampa, Fla

Louisville

Degrees —Two Louisville physicians have been honored in the past month by having been the recipients of the degree of LL D Dr Jos B Marvin had the degree conferred by Georgetown College, this State, and Dr Joseph M Mathews, President elect of the A M A , by the Waynesburg College of Pennsylvania

Dr **Louis Frank** has removed his office from corner of Second and Chestnut, where he has been associated with Dr T H Stucky, to 231 W Chestnut Street

Hospital —The annual commencement of the Louisville Training School for Nurses was held in the lecture room of the Louisville Medical College on the evening of June 15, there being seven graduates

Wash Fithian, M D , one of the most prominent physicians of Paris, Ky , was stricken with apoplexy in his office June 28 His condition is not considered very grave

Alumni —The annual meeting of the Alumni Associations of the Louisville College of Dentistry and of the Hospital College of Medicine were held in the college buildings on June 28 and 29 Interesting clinics were held, papers read and a banquet held at Fountain Ferry Park

Commencement —The annual commencement exercises of the Kentucky School of Medicine were held in Macauley's Theater on June 29, there being 140 graduates Degrees were conferred by Dr R. Lin Cave, president of the Kentucky University and Mr James P Helm, president of the Board of Regents of the Kentucky School of Medicine An address was made by Dr James S Sweeny, Sr , president of the Board of Trustees of the Kentucky University and by Dr George R White, valedictorian of the class Dr Geo T Harris and Dr Sidney J Meyers received the first honors for the fourth and third years respectively

Hospital College of Medicine.—The annual commencement exercises of the Hospital College of Medicine and the Louisville College of Dentistry were held at Macauley's Theater on June 30 There were 130 graduates The annual address was made by Dr C A L Reed of Cincinnati, there being no address from a member of the class, this being the custom at this school for some years A portrait of Dr J A Larrabee, who was president of the faculty, was placed in the center of the stage draped in mourning Lewis S McMurtry has been elected president of the faculty, vice Dr Larrabee deceased, and has had added to his chair of gynecology and abdominal surgery that of obstetrics taught by Dr Larrabee This is a well merited honor as Dr McMurtry has a wide reputation as a skillful surgeon Thos H Stucky was elected vice president and H H Grant treasurer The chair of pediatrics was added to the chair of chemistry now held by P F Barbour

Health Officer —The monthly report of Health Officer Allen contains some interesting statements Notices served, 459, nuisances abated 1897, sheep and cattle condemned and killed 21, scarlet fever placarded 7, and diphtheria 1, specimens of milk examined 52, number found below the standard 5, births reported 79, marriages reported 10 A large number of physicians are receiving the badges issued by ordinance giving them right of way over streets when making professional calls, recommendation is made that water plugs be placed at certain places in the city, that filthy gutters may be flushed and cleaned, pasters to be used by embalmers to show they are legally licensed are ready for distribution, there were 236 deaths during the month of June against 300 last June, of these 117 were males and 119 females, cholera infantum caused 17 of the deaths and consumption 18, cerebral meningitis 12, and organic heart disease 10

Duncan Eve, M D, Nashville, chairman of the Committee of Arrangements of the Mississippi Valley Medical Association was in the city one day last week to confer with the secretary and a number of the local committee for the Louisville meeting relative to the meeting of the Association in Nashville in October next.

Societies

The following recent meetings are noted

Alabama —Calhoun County Medical Society, Anniston, July 5

Illinois —Chicago Medical Society, June 29, Tri County Medical Society, Paxton, July 6

Indiana —Grant County Medical Society, Marion, June 16, Lawrence County Medical Society, Mitchell, June 23

Iowa —Central Iowa Medical Association, Webster City, June 21, Des Moines Valley Medical Society, Ottumwa, June 23, Dubuque Medical Society, June 23, Sioux Valley Medical Association, Sheldon, June 23, Eastern Iowa District Medical Association, Burlington, June 30, Austin Flint Medical Association, Iowa Falls, July 12 and 13, Scott County Medical Association, Davenport, June 30

Maryland —Tri State Medical Society, Cumberland, June 23

New Jersey —State Medical Society, Asbury Park, June 29 and 30

New York —Broome County Medical Society, Binghamton, July 5, Erie County Medical Society, Buffalo, June 14, Syracuse Academy of Medicine, June 21.

Ohio —Columbus Academy of Medicine, June 20, Lucas County Medical Society, Toledo, June 17, Tri County Medical Society, Ashtabula, July 5

Pennsylvania —Northumberland County Medical Association, Milton, June 30, Tioga County Medical Society, Lawrenceville

South Dakota —South Dakota Medical Society, Sioux Falls, June 15 and 16

Texas —North Texas Medical Association, Fort Worth, June 21 and 22

West Virginia —Mason County Medical Society, Point Pleasant, June 30

Wisconsin —Central Wisconsin Medical Society, Janesville, June 28, Northwestern Wisconsin Medical Association, Stevens Point, July 12

Yellow Fever —As we go to press with the last form, we read in the press dispatches of the outbreak of yellow fever among the troops This need occasion no alarm, as no more efficient hygienic corps exists than may be found in the Army The disinfection of all baggage of all persons entering our lines from Santiago, whether refugees or prisoners, may have to be carried out

THE PUBLIC SERVICE

Movements of Medical Officers —To report to General Brooke at Chickamauga Park, Georgia, Acting Assistant Surgeon Humphrey Bate, Jr, from Castalian Springs, Tennessee To the 4th Corps, General Coppinger, at Tampa, Florida Acting Assistant Surgeons E H Morton and Samuel W Kelley To the General Hospital at Key West, Florida Acting Assistant Surgeon T A Clayton To the General Hospital at Fort Monroe, Virginia Acting Assistant Surgeons Baer Street from Sheridan's Point and Otway W Rush from Madisonville, New York To the Hospital Ship *Relief* Major A E Bradley, Brigade Surgeon To the 5th Army Corps, General Shafter, at Santiago, Cuba Acting Assistant Surgeons Stanley Warren, Charles C Marbury, Jas VcV Mackall, A A Snyder, Jesse Ramsburgh, Henry L Brown, Jas T Corwin, John R Hicks, Rufus D Boss, John D Thomas, Edward J Meyer, Charles Brewer, Joseph L Sanford, John W Wright, H C Cline, Russel W Chidsey, J H Feuss, J S White and Ezequiel de la Callé

Resigned Major Arthur L Osborn, Surgeon 6th Ohio Volunteer Infantry

Nominations, most of which were confirmed on the closing day of the session To be chief surgeon with the rank of Lieutenant-Colonel, P F Harvey, Major and Surgeon U S Army To be chief surgeons of division with the rank of Major Nelson H Henry, Assistant Surgeon General of New York, Victor C Vaughan, Surgeon 33rd Michigan Volunteers, Charles M. Robertson, Surgeon 50th Iowa Volunteers To be chief surgeons of brigade with the rank of Major, Royce Day Fry of Ohio, Elmer E Heg of Washington, Charles R. Parke, Surgeon 13th Pennsylvania Volunteers, Jabez N Jackson, 3rd Missouri Volunteers, Wallace Heff of Ohio, Geo F Shiels of California, Wm S Bryant, Assistant Surgeon 1st Massachusetts Heavy Artillery, Wm F Deniedeman, Assistant Surgeon 22nd Kansas Volunteers, Francis C Ford of Texas and Lawrence C Carr of Ohio

CHANGE OF ADDRESS

Bozinch, M F from 291 N Carpenter St to 162 W Chicago Ave, Chicago, Ill
Bulette, W W from 149 Santa Fe St to Central Block, Pueblo, Colo
Childs C F, from Decatur to Irondale, Ill
Furay C E, from 2409 N St, South Omaha, to 2237 Seward St, Omaha Neb
Franklin G W., from Jefferson, Iowa, to Good Samaritan Hospital, Portland Ore
Fisk, F F, from Waterloo, Iowa, to Cedar City Utah
Hoff, F, from 510 Walnut St to 200 Grand Ave East, Des Moines, Iowa.
Hawes, E E, from 818 Broadway to 164 Washington Ave, Boston, Mass
Heath, C L, from Treeville, Tenn, to Lindsay, Ky
Kerr, A. W, from Keene, Texas, to Woodburn, Iowa.
Lambert F E, from Iowa City to Alburnett Iowa
Murphy, J A, from Cincinnati Ohio to Wequetonsing, Mich
McNicholl, T A., from Sea Cliff, L I, to 140 E 80th St, New York, N Y
Monroe, J, from Markesan, Wis, to Blackfoot Idaho
Morton, G from Rialto Bldg to 14 E 11th St Kansas City, Mo
Moe, A J from 853 Western Ave, Chicago, Ill to La Crosse, Wis
Nichols, C B, from Denver, Colo to Fort Wingate, N M
Perry, J G., from New York N. Y, to Ridgefield Conn
Purcell, E C, from Denver to Elyria, Colo
Roberts N G from Denver to Littleton Colo
Smith C B, from Decatur to Lorington Ill
Smalt, A E., from Stillwater to Willow River Minn
Whittaker J T., from Cincinnati Ohio to Lakewood, N Y
Wood L H, from 1005 Boulevard to 2405 Boulevard F, Denver, Colo
Whitfield B W from Galloway to Demopolis, Ala
York, F A, from Galveston, Texas, to Denver, Colo

LETTERS RECEIVED

Alton, C D Hartford, Conn Allen F H Shelby, Iowa, Aufderheide, W D St Louis, Mo Atkinson W B Philadelphia, Pa., Argon & Co, New York, N Y American Impulse Wheel Co, New York, N Y Ashe, W R Lebanon Ohio Atkinson H H French Camp Cal

Brown, R. J Kansas City Mo, Bisjord J M, Kensett, Iowa Bailey, J, Florence Colo Bernd & Co, Henry, St Louis Mo Battle Creek Sanitarium, Battle Creek, Mich Brophy, Truman W, Chicago, Ill

Christofferson, A. L Oshkosh, Wis, Combemale F Lille, France Craig O S Hamlin N Y Couser T O, Sunbury, Pa. Coyle John A, Lancaster Pa Colorado Sanitarium Boulder, Colo

Eastman M E Terre Haute Ind Evans, Roscoe Allegheny, Pa. Emmet J D New York, N Y, *Elgin Milkine Co Elgin, Ill*

Fabenfabriken of Elberfeld Co New York, N Y Frahm, M., Tuscola Ill

Gum F M Frankford Del Grasse D F, Fargo, N D, Gleitsman, J W, New York N Y Griffith J P Crozer, Philadelphia, Pa

Hektoen, L., Chicago Ill Hill W H, Newcastle Mo Hodgkinson, C, Ypsilanti Mich, Hull, J F, Badger, Iowa, Hull Geo S Pasadena, Cal, Huff W F Des Moines, Iowa Hunter J V Nimrod N C

Klebs, Edw Chicago, Ill Kiernan J G Chicago Ill Ketchum, G A, Mobile, Ala., Kimmons, S H Fort Smith, Ark, Keen, W O, Burkesville, Ky

Lowe, Geo S, Ann Arbor Mich, Lindley, J S, San Carlos, Ariz

Merck & Co New York, N Y, Morrow F R, Fayetteville, Ark. Morris, J T Chicago, Ill Mulford H K. Company Philadelphia Pa., Miller, Y Y Brown's Grove Ky McKeldin R A W., Washington D C Melesio de Anda, Cocula Jal, Mexico McCreery J W, Pioneer Iowa Miner C L Asheville N C, Murphy F E, Kansas City, Mo

Patterson C E Grand Rapids, Mich, Parker, E F, Charleston S C, Parker, E E, Maxinkuckee Ind

Redman L H Scipio Ind Reed J B, Topeka Kan

Shotwell, A N., Mt Clemens Mich Seilen, D Chicago, Ill Scott A C Cleveland, Ohio Shlensky I, Toledo, Ohio Sander Mineral Water Company St Louis Mo Smith Kline & French Co, Philadelphia Pa Smith Jos T Baltimore Md, Stuart, F London England Shortridge W R Elgin, Ill Smith C B Newtown, Pa Southall, J H *Little Rock, Ark*

Talford P B Pittsford Mich

Voorhees S, Newton, N J

Woodruff, E W, Columbus Ohio Welch Grape Juice Company, The Westfield N Y

Yoakam F O, Homer, Ohio

Zeller, H Rush, Beamsville, Ohio

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ANNUAL ORATION

SURGERY OF THE LUNG

The Oration in Surgery Delivered at the Forty ninth Annual Meeting of the American Medical Association, held at Denver, Col June 7 10 1898

BY J B MURPHY, M D

CHICAGO ILL

Mr President and Members of the American Medical Association —Permit me to express my appreciation of the great honor conferred on me when elected to deliver the Annual Address on Surgery to this distinguished body of scientists Custom has ordained that the address in the specialties of medicine at our annual convocation should be confined to a review of the advancements of the science and art of this branch in general in the preceding year I take the liberty of deviating a little from this precedent to review the efforts and achievements made in a special and, until the last two decades, neglected field of surgery I believe I am justified in this digression, as at the last, our semi-centennial convention, my predecessor enumerated and so emphasized the achievements of surgery for the last half century that I fear the consideration of a year's progress would be of small interest

I have therefore chosen for my subject today the surgery of the lung An analysis of the accomplishments in this special line of work is of great interest, the advancements having been made by individual and unsupported efforts The profession at large has never entered into this field with the enthusiasm, persistency and energy with which it has invaded other fields, as the peritoneum, the genito urinary, the osseous and nervous systems Indeed, if we were to take from the list of original investigators and operators in this field thirty names, it would be practically a blank, the work has been of a desultory character The surgery of the lung has had its epochs of advancement In no field of medicine has the intermittence in surgical effort been so conspicuous as in that of the lung We find that Hippocrates, in the fourth century, B C, recognized that pneumonic abscesses opened into the bronchus and slowly recovered in that way He repeatedly opened them through the chest wall and resected the rib to obtain a better field He advised thoracotomy and pneumotomy as the proper treatment for this class of cases[1] These operations were then lost sight of and did not come to light again until 1584, when Schenk[2] recommended them Oblivion was its fate again until Willis in 1664 drew attention to it Bligney in 1670 reported a case of phthisis which was cured by accidental puncture of the chest with a sword, the opening allowed the pus to escape from the lung Purmann in 1692 advised incision of the chest wall in hemorrhage, empyema and pulmonary cavities, and for removal of all kinds of effusions Baglini in 1696 opened the chest Baglivus in 1710 treated wounds of the lung by free incision of pleura and advised the same treatment for phthisical cavities Berry of Dublin, in 1726, suggested the drainage of pulmonary cavities, and cited cases of recovery following pulmonary incision Sharpe in 1769 dwelt on the difficulties of separating pleuritic adhesions and advised cutting into the cavity with the lance and inserting tubular drainage[3] Pouteau and David in 1783 advised incision to pleura and trocar to depth of pus[4] Faye in 1797 operated for abscess of the lung which was adherent, and advised puncture, irrigation and tampon, for such cases Jaymes and Richerand in 1813 advised incision[5] H Callisen in 1815 advised puncture and exploration of the chest by paracentesis, and if pus were detected, incision of the pleura, then digital palpation for fluctuation in the lung with immediate incision[6] Zang in 1818 reported fifteen incisions of the chest wall, seven for empyema and eight for abscess Nasse in 1824 incised a pulmonary cavity[7] Krimer in 1830 wished to perform this operation, but the medical consultant would not consent Brichatan in 1830 opened a cavity with a caustic paste and also one with the scalpel, in which he cut into the lung a distance of eight lines and then dilated with forceps The latter patient lived nine months Postmortem showed the cavity obliterated[8] To the above list of investigators may be added the names of Brichet, 1831, McLeod, 1836, Clausen, 1839, Hastings, Herf and Collins, 1844 Then came a long period of quiescence until we find the subject again receiving attention as a modern advancement in 1873 by Mosler and Pepper[9] Neisler, 1873, drained a tubercular cavity of the lung The work of F Mosler is conspicuous as he, though a medical man, advocated in repeated theses surgical interference in diseases of the chest His efforts were ably supported by Koch and Bull, and the experiments of Gluck, Block, Hans Schmid, D Biondi, and by the cases of Rugge, Christian Fenger, E W Andrews, Kroenlein, Omboni, Roswell Park, B Pitts, Fabricant and others

It would be impracticable for me to enumerate here the names of men who have labored so zealously in the interest of surgery of the lung, as they will be given due credit under the special headings to which their investigations contributed Let us consider, first, the anatomy, second, the physiology, third, the experimental research, and fourth, the course and results in clinical cases The last two we will take up under the headings of separate operations or pathologic conditions, while the first two, the anatomy and physiology, will be treated of here

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[1] Ed. Littré, Vol vii, p 61

[2] Wm Koch, History of Lung Surgery

[3] Treatise of, Operation in Surgery London 1769 p 128

[4] Mem Surg' la Thesie Pulmonaire Paris 1783

[5] Jour Gen Med Vol xlv

[6] Callisen s System of Surgery Ed iv Vol i 1815 p 418

[7] Harris' Arch für Med. Erf, Band ii Seite 117

[8] Jour Comp des-Sc Méd No 36, p 144, 1830

[9] Deut Med Woch, 1882

Anatomy—The lungs are almost entirely situated within the bony cavity of the chest, the exception being the small projection of the apices above the level of the first rib A straight line drawn, however, from the upper surface of the first rib behind to the upper surface of the clavicle in front, would pass above the apices A straight line drawn in any position from the margin of the ribs and costal cartilages or sternum across the chest cavity below would not touch the lung The chest has two diaphragms, the first closing a small kidney-shaped orifice, made up by the combined arches of the first ribs, the sternum in front and the spine behind The large vessels of the neck, the trachea, esophagus and nerves pass through this orifice This diaphragm rises and falls with each respiratory act, from one-half to one and one-half inches in extent, depending upon the respiratory effort and the condition of the respiratory organs, moving most in health and least, if at all, in apical disease The chest, from its upper diaphragm, in its normal shape represents a continuous conical expansion to the lower margin of the ribs (See Fig 1) The dress in females converts it into a balloon shape, the same is true of emphysema the most expanded portion of the chest, under these circumstances, is about the lower margin of the fifth rib, it then contracts to the costal margin of the twelfth rib (See Fig 2) For many years it was the prevalent opinion that the lung filled the greater portion of the chest The modern anatomist has demonstrated on frozen specimens that only a small portion of this cavity is occupied by the lung The radiographs which I have had made show that the position of the diaphragm in the frozen specimen and cadaver is misleading (See Figs 3 and 4)

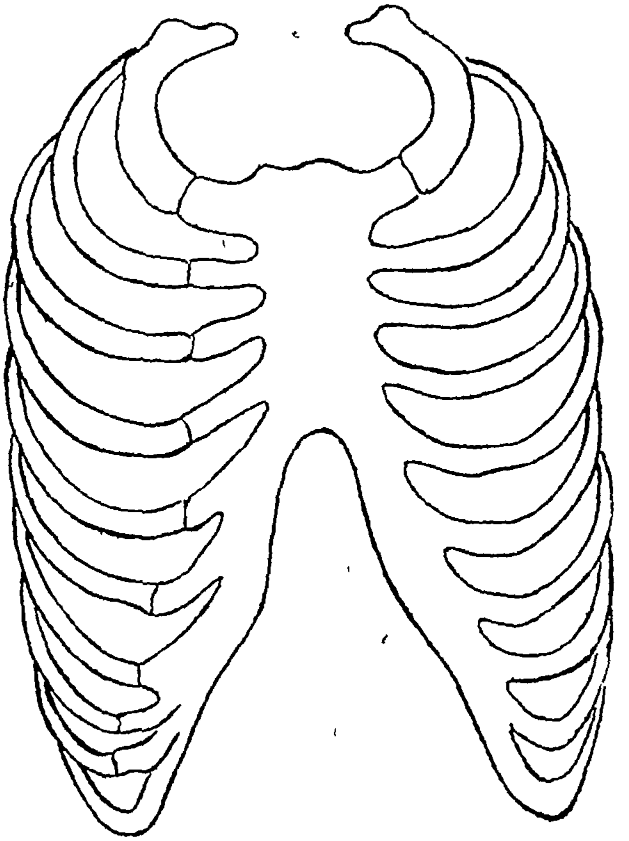


Fig 1—Normal healthy subject

The space embraced within the chest is filled in behind, first, by the anterior curvature of the heads and necks of the ribs and the bodies of the dorsal vertebræ, the spinal column extending far forward helps to make up the mediastinal septum, which divides the chest into two irregular flattened cones The distance from the sternum to the spine is about two-thirds of the depth of the thickest portion of the cone, which is from the most prominent posterior part of the arc of the rib directly forward (as shown in Figs 5 and 6 from Fowler and Godlee)

The hilum of the lung resting anterior to the spine is therefore about midway between the anterior and posterior margins of the chest cavity as outlined by the ribs The anomalies of the ribs and the shape of the chest change the respective relations between portions of the lung and chest wall, and must be considered in the surgery of the individual case When a seventh cervical rib is present it extends far above the level of the apex of the lung and may compress it, but it is not so likely to interfere with the lung as with the roots of the brachial plexus An additional dorsal rib is usually accompanied by an elongation of the pleural cavity at that point, but the lung does not fill the pleura to its margin A bifurcation of the ribs anteriorly has no particular influence upon the chest The seventh is usually the last true rib, the eighth, however, is occasionally joined to the sternum The width of the intercostal spaces is of importance, it is greatest in the second and third and tenth and eleventh, and is widest just at the tip of the bony end, it can be increased to its greatest degree when the spine is erect, but is not necessarily increased on inspiration A division of the pectoral and intercostal muscles allows of a great increase in the separation of the ribs, this is most marked in the young

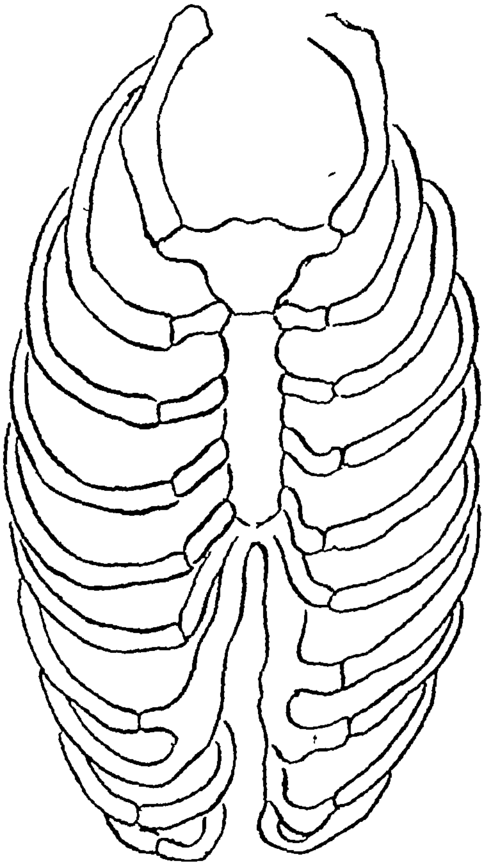


Fig 2—Deformed by tight lacing

The space in children attained in this manner usually suffices for operation without costal resection

The sternum is not perpendicular, it deviates from this about 25 degrees Its angle ranges in the respiratory act between the 160th and the 170th degrees (Fowler and Godlee)

The diaphragm forms the lower elastic, irregularly convex boundary of the chest It is a very large-sized muscle with firm attachments to the entire circumference of the lower margin of the chest It is in constant movement in health, and is the most powerful individual respiratory muscle It is the piston of respiration, the chest wall is the cylinder See Figs 7 and 8 Its vaulting within the chest cavity is of the utmost import to the physician and surgeon It is divided into two almost equal parts, the central and front part, corresponding to the position of the heart, is the highest and is practically stationary It is on a level with the fourth interspace on the right side, with the sixth rib in the axillary line and with the eighth rib in the scapular line and the body of the ninth dorsal vertebra On the left side at the points mentioned it is five-eighths of an inch lower In health it varies from the third to the sixth interspaces in its vaulting (See Figs 7 and 8) The origin of the central (spinal) portion is fixed, and its vaulting is changed by the contraction and relaxation of the diaphragmatic muscle assisted by the intra-abdominal pressure The arch and length of the diaphragm are changed by the shape of the chest, it is shorter and higher arched in the hollow-shaped chest of females and emphysemata In the balloon-shaped chest the diaphragm has the least action, this shape is considered a predisposing cause to phthisis The degree of the vaulting of the diaphragm into the chest in life has been overestimated by anatomists from the examination made by them on the cadaver and frozen specimens, a study of my radiographs, a few of which are here reproduced, will show that the diaphragm in forced expiration elevates to a level with the lower margin of the fifth rib in the extreme and usually only to the sixth rib In forced inspiration it is an inch to an inch and a half lower

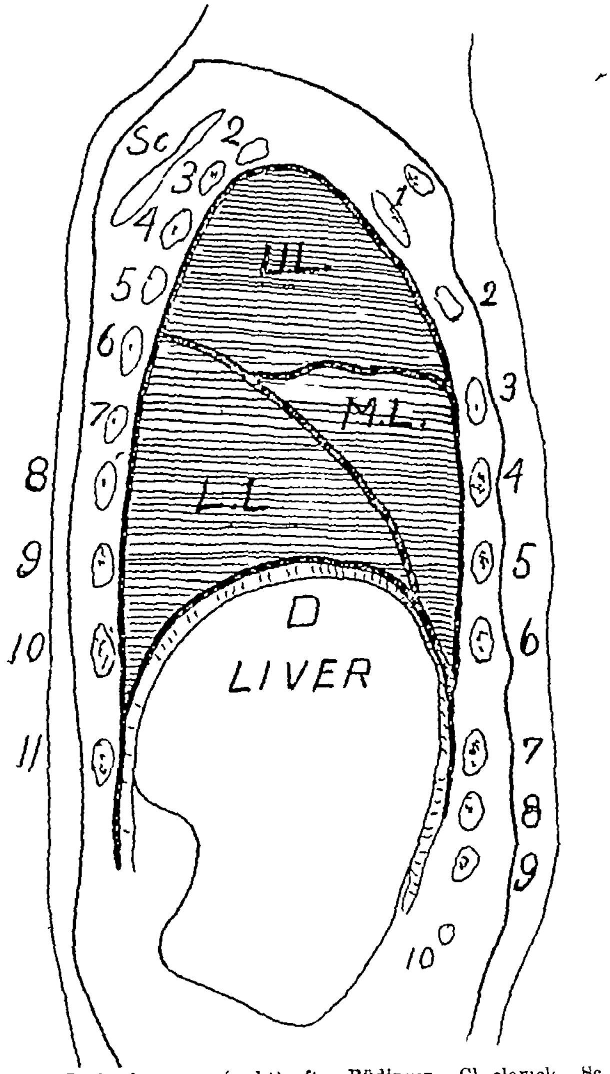


Fig 3 —Sagittal section (right) after Rüdinger Cl clavicle Sc scapula D, diaphragm U L, upper lobe of lung M L middle lobe of lung L L lower lobe of lung The pleura is indicated by heavy lines

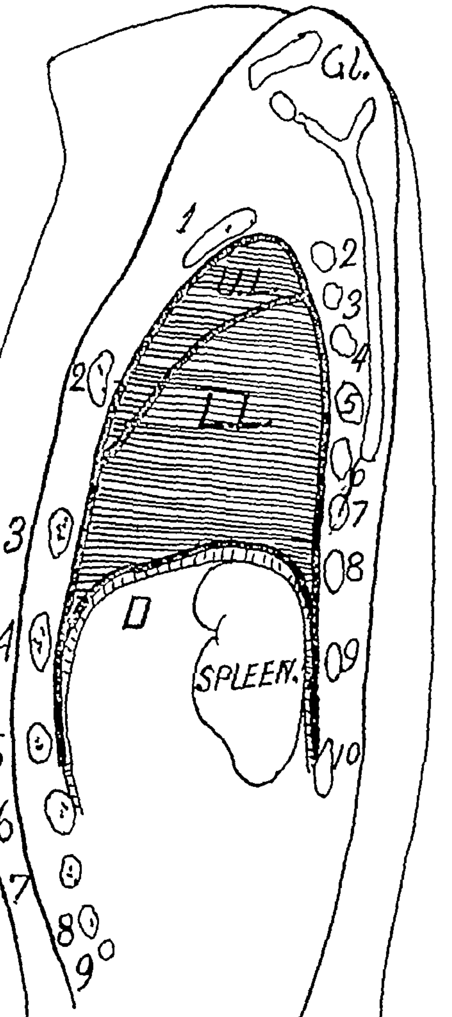
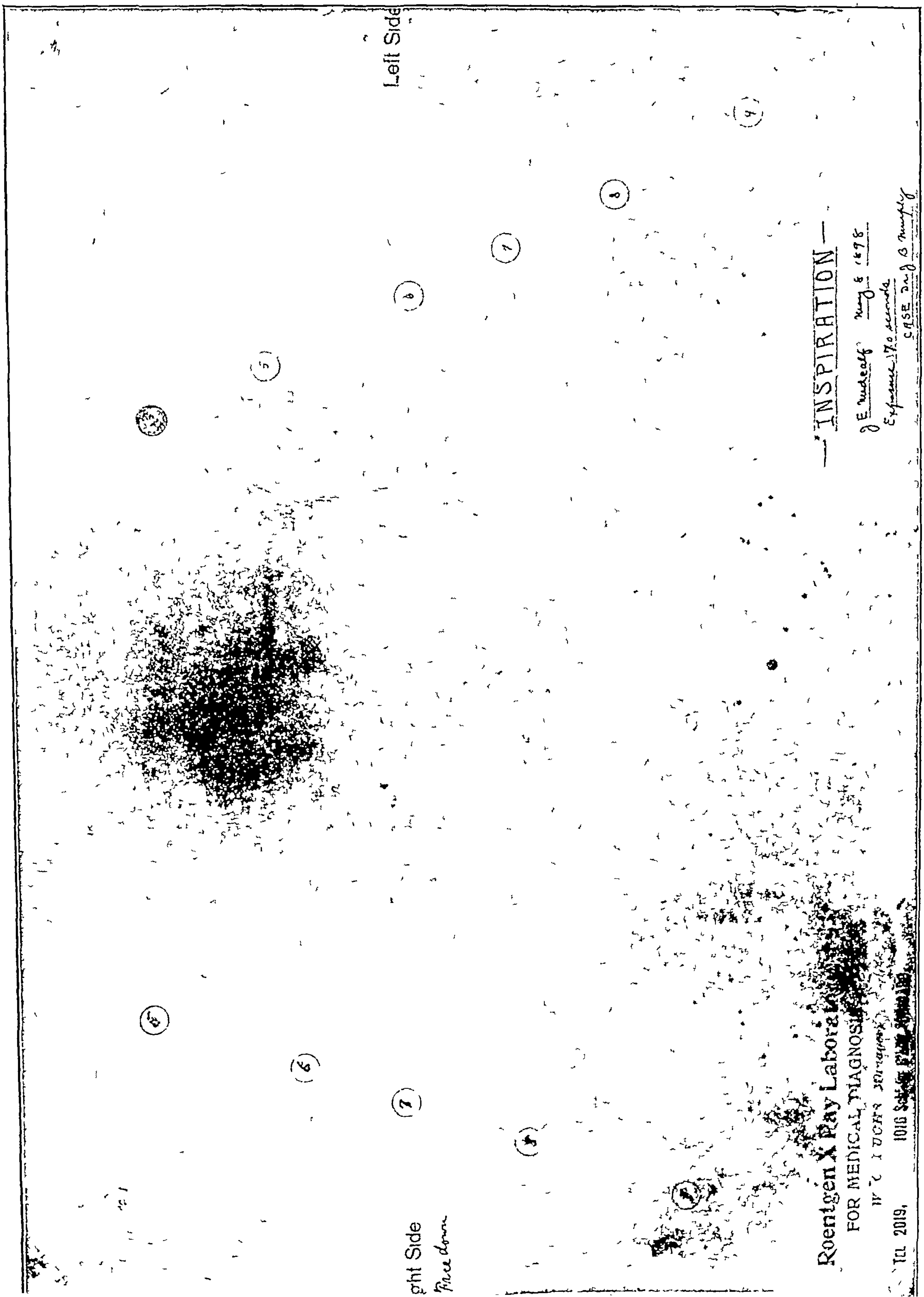


Fig 4 —Sagittal section (left) after Rüdinger Cl clavicle, Sc, scapula D, diaphragm U L, upper lobe of lung L.L lower lobe of lung The pleura is indicated by heavy lines

It will be seen in radiograph No 1, which was taken in full inspiration, held for seventy seconds during the entire exposure, that the diaphragm on the right side comes to a level with the middle of the seventh rib at its cartilaginous junction, on the left side that it is about three-eighths of an inch lower and passes to the margin of the ribs with a lesser vault

Radiograph No 2 shows that in complete expiration, held for forty seconds during the entire exposure in the same healthy individual, the highest

RADIOGRAPH No 1



portion of the diaphragm came to the upper margin of the sixth rib on the right side and was about one fourth inch lower on the left This shows the degree of movement of the diaphragm in the respiratory act

Radiograph No 3, from a male adult, exposure forty-five seconds, shows in complete retained inspiration that the diaphragm on the right side comes to the middle of the sixth interspace, and on the left side it extends about three-eighths inch higher Radiograph No 4, from same person as No 3, shows the position of the diaphragm during complete exposure of forty five seconds in extreme expiration, the diaphragm on the right side comes to a level with the lower margin of the fifth rib, and on the left side it extends about one third of an inch lower

Radiograph No 5, Miss K , emaciated female, shows the diaphragm on the right side as taken during normal respiratory movements, face down, it extends to the lower margin of the fifth rib, the outline is not discernible on the left side Radiograph No 6, back down, Miss K , the same individual as radiograph No 5, shows the diaphragm on the right side as taken during normal respiration, it extends to a level with the upper margin of the fifth rib in front and on a level with the middle of the tenth rib behind, the diaphragm on the left side is one-fourth inch lower Radiograph No 7, Miss K , showed the same result The results in an additional number of radiographs not here reproduced have been practically the same

The *chest wall* is supplied with blood by the intercostal arteries, the first branch is given off from the subclavian and the others from the posterior surface of the aorta They are close to the pleura behind and separated from it with the accompanying veins in front by the intercostal muscles In addition the chest wall receives a blood supply from the internal mammary artery, which runs down behind the sterno clavicular articulation, along the posterior surface of the rib cartilages about one-half inch from the sternum At the sixth space it subdivides into the superior epigastric and musculo phrenic, it gives off small intercostal branches in its course An anomaly of this artery, an early subdivision at the second or third space, may occur and a large branch extend outward and downward in the direction of the nipple This branch would be interfered with in most operations through the anterior wall of the chest In operrations on and accidents to the anterior chest wall the location of the internal mammary artery should be distinctly borne in mind, as fatal hemorrhage has occurred from incisions, or injuries to this artery The intercostal veins empty into the azygos and superior intercostal veins The azygos veins are large and flat and have scarcely a plus pressure In separating the adhesions of a diseased apex on the mediastinal side the azygos must be given great consideration, as it is easily torn and has a double danger, hemorrhage and air embolus, the azygos completely collapsed in the dog with each inspiratory act (See Fig 9, azygos vein and internal mammary artery)

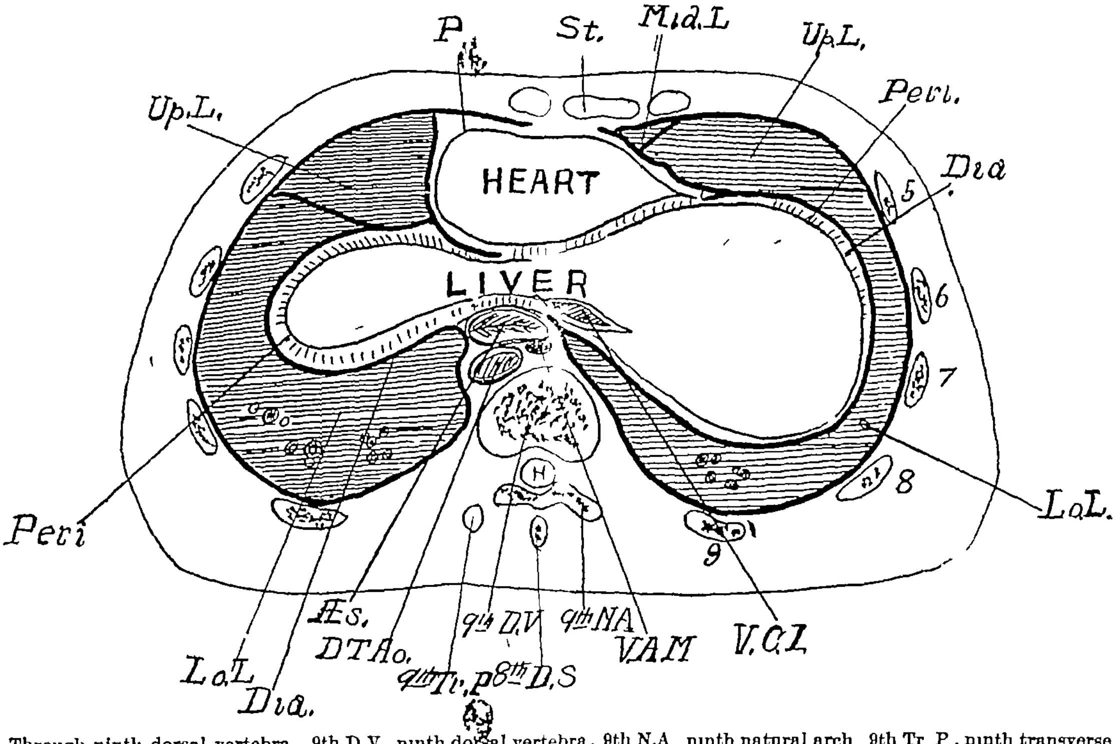
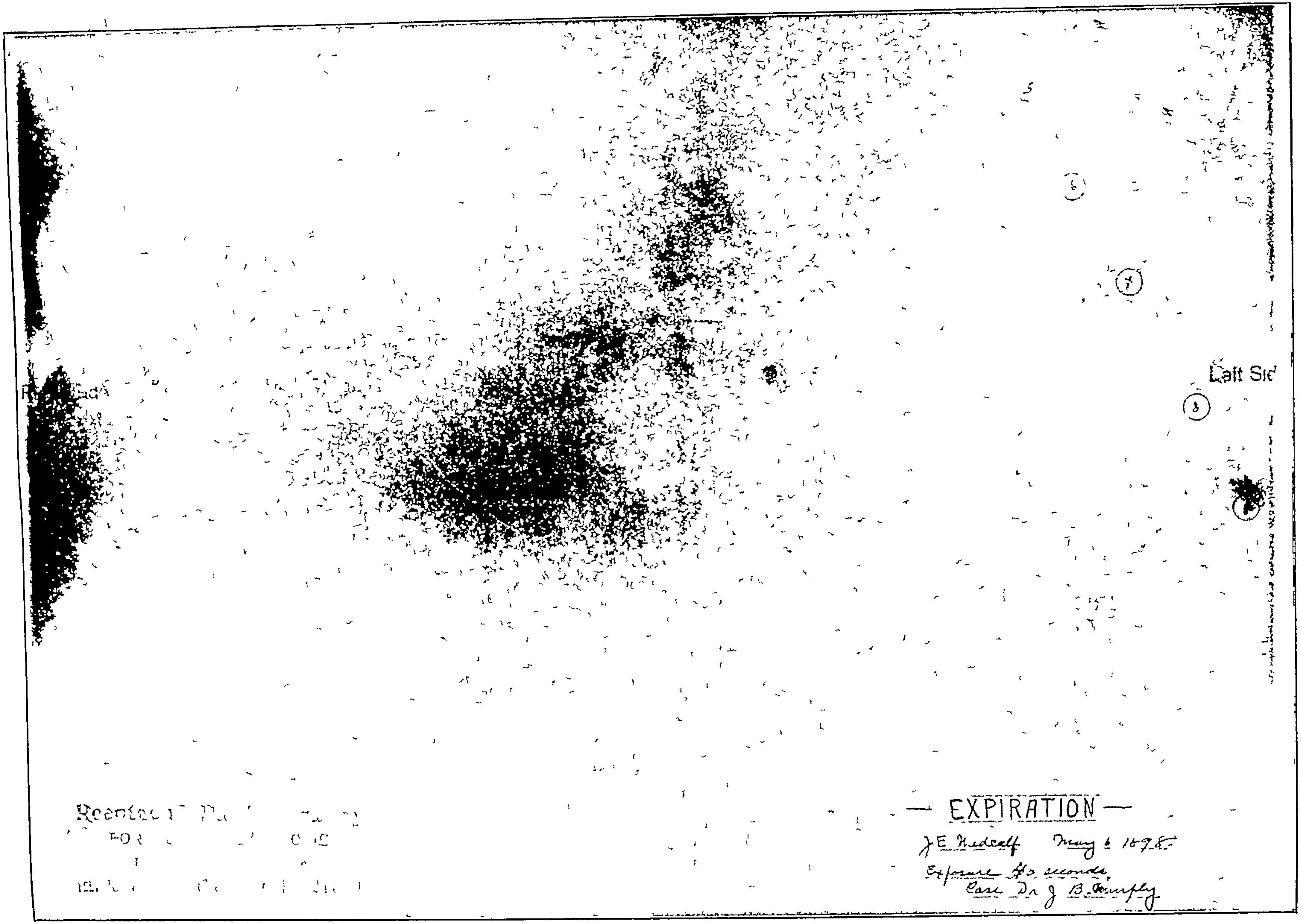


Fig 5 —Through ninth dorsal vertebra 9th D V , ninth dorsal vertebra , 9th N.A ninth natural arch 9th Tr P , ninth transverse process 8th D S eighth dorsal spine, St. sternum , 5, 6 7, 8 9, ribs and cartilages D T Ao descending thoracic aorta V C I vena cava inferior V A M vena azygos major Æs , œsophagus Dia diaphragm P , pericardium Up L upper lobes of lungs Lo L lower lobes of lungs, Mid.L middle lobe of right lung The pleura is indicated by heavy line

Lymphatics —The lymphatics of the chest wall connect with the intercostal glands situated at the costo vertebral junction The efferent vessels from these glands empty into the thoracic duct, their lower branches into the receptaculum chyli In front they run forward with the internal mammary artery and vein, where they have additional glands (sternal) The substernal glands also receive lymphatics from the anterior abdominal wall, diaphragm and liver This anatomic feature explains the secondary mediastinal infections and tumors which occur from diseased foci at and below the diaphragm

The mediastinum is best studied with the classification of Quain the superior mediastinum, is that above a line drawn on a level with the upper border of the pericardium from the lower portion of the fourth dorsal vertebra behind to [illegible] ction

Radiograph No 2



manubrium with the body of the sternum in front It contains the trachea, esophagus, thoracic duct, the arch of the aorta, the innominate, left common carotid and subclavian arteries, innominate veins and the upper part of the superior vena cava, the phrenic and pneumostric nerves, the left recurrent and cardiac nerves, the cardiac lymphatics and the remains of the thymus gland The anterior mediastinum is the narrow upper half, the two pleuræ come in contact in this position, and occasionally have a communicating foramen This opening is more common in the dog and is very detrimental to experiments It is less frequently found in the guinea pig and rabbit In monunguals (single hoofed animals) it is always present When a foramen does not exist in the dog the mediastinum not infrequently ruptures at this point, when one side of the chest is opened, and allows both lungs to collapse The septum is thinnest behind the second portion of the sternum and the pleuræ diverge above and below from that point (See fig 9) This space contains only a few glands and areolar tissue tion it was difficult to separate the auricle from the pleura Injury to the mediastinal contents is one of the greatest dangers in the operative technique of pneumectomy

The pleura is a mesoblastic product like the peritoneum and meninges, or according to Waldeyer and His a hypoblastic product It is composed of a thin fibrous layer covered with endothelia It reacts rapidly to irritants, but is not so active in its reproduction as the peritoneum It is a closed sac completely lining the chest wall and enveloping the lung except at its hilum and is divided into parietal and visceral laminæ The pleura pulmonaris envelops and is firmly attached to the lung, it has depressions lining its fissures The pleura costalis is attached to the ribs by a layer of connective tissue In health it is practically impossible to separate the pleura from its attachment to the rib without opening its cavity In disease it is often very much thickened and can be readily pulled off without the danger of pneumothorax The pleura mediastinalis is attached to all of

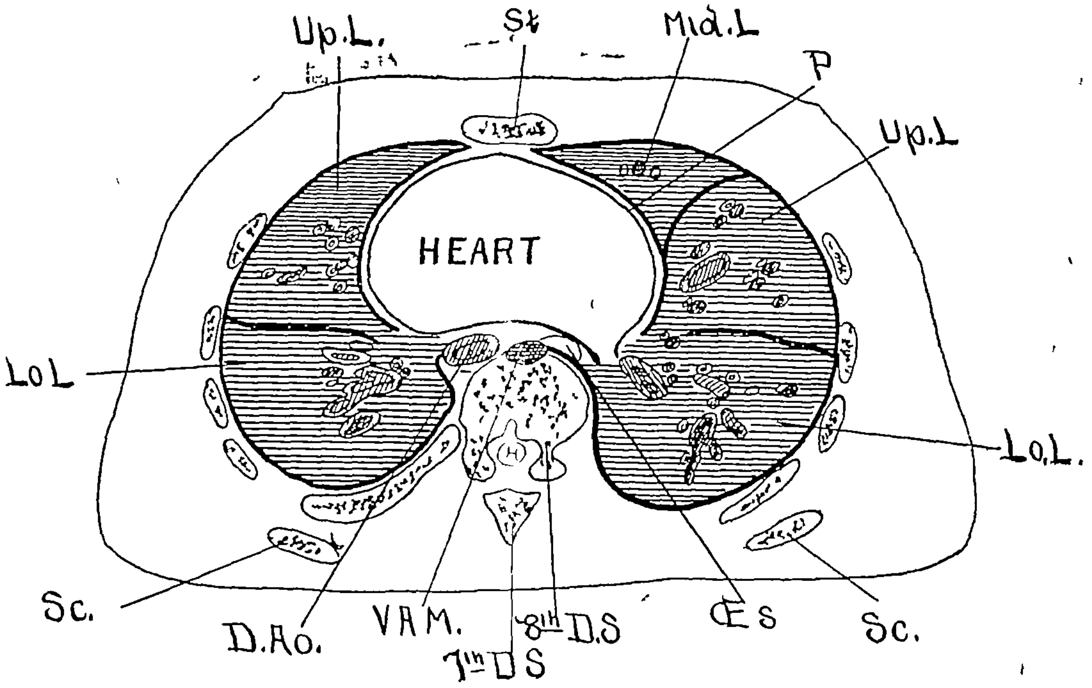


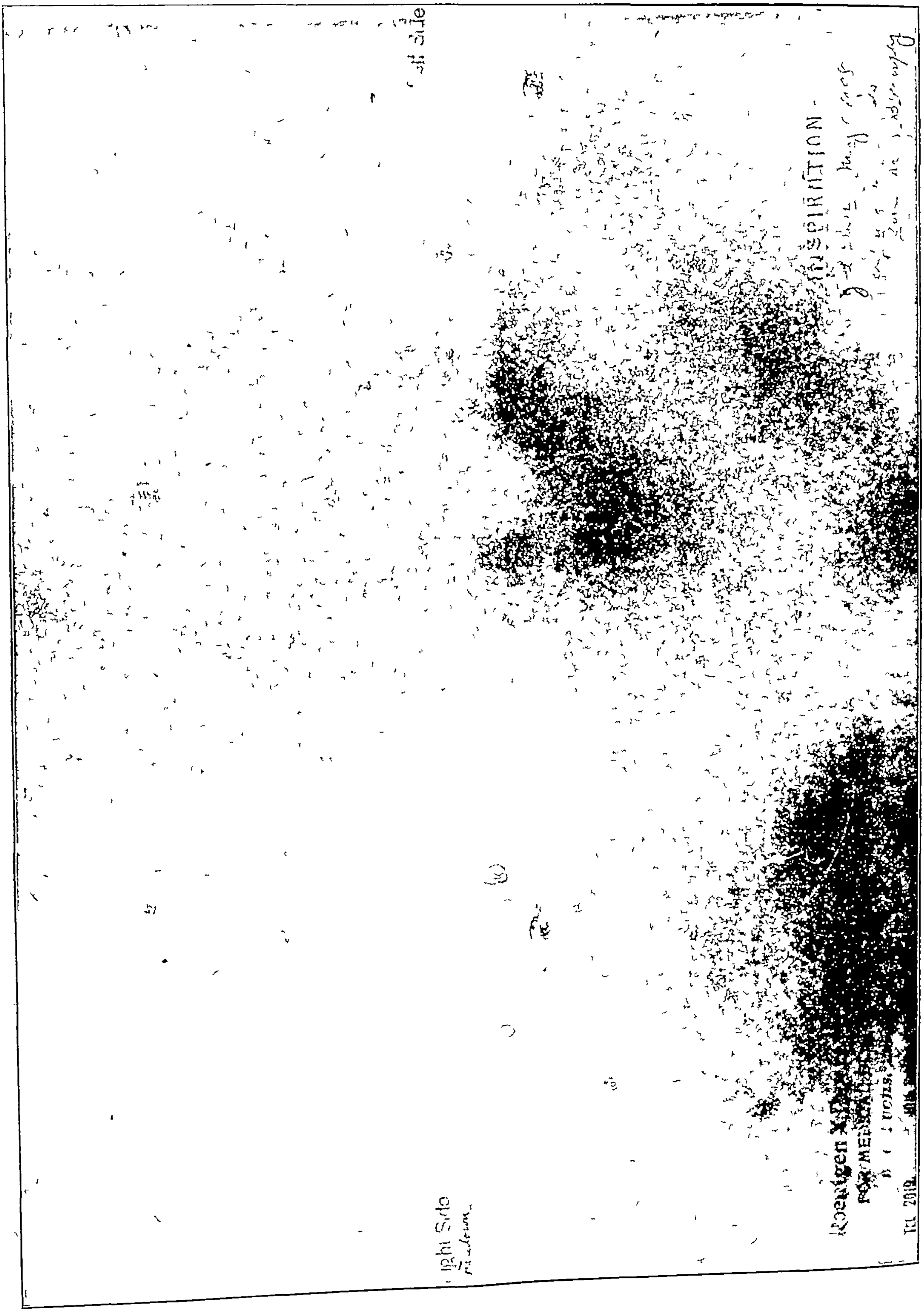
Fig 6.—Through eighth dorsal vertebra 8th D V eighth dorsal vertebra 7th D S, seventh dorsal spine Sc, scapula St sternum D.Ao, descending thoracic aorta V A M vena azygos major Æs œsophagus P pericardium Up L, upper lobe of lungs L L lower lobe of lungs Mid L middle lobe of right lung The pleura is indicated by heavy lines

The middle mediastinum is the enlarged central portion which contains the pericardium and its contents, the phrenic nerves and accompanying vessels, the arch of the azygos veins and the roots of the lungs with their bronchial glands The posterior mediastinum is situated between the pericardium, the diaphragm and roots of the lungs in front, and the spine behind It contains between its pleural layers the descending thoracic aorta, the esophagus, the azygos veins, the thoracic duct and the posterior mediastinal glands We must be mindful that the lower half of the superior vena cava is in the middle mediastinal space close to the trunk of the pulmonary artery and vein on the right side and must not be included in the ligature nor torn in separating the adhesions at the hilum of the lung The right auricle is also endangered in this position and has been injured in experimental pneumectomy on animals While separating an adherent diseased lung in a cadaver I tore directly into the auricle, after recognizing the condition it was difficult to separate the auricle from the pleura

the important structures of the mediastinum, the esophagus, trachea, pericardium, vagus nerves, innominate artery, superior vena cava, phrenic, etc These attachments are practically the same on both sides The pleura is intimately attached to these structures and can not be removed without a careful dissection In separating a lung adherent in the mediastinum great care must be taken to keep on the pulmonary side of the adherent pleura, as there is danger of rupturing important mediastinal structures, further, the two pleuræ may be adherent and in separating them the other pleural cavity might be opened This would most likely occur between the esophagus and the aorta, in front of the seventh, eighth or ninth vertebral bodies, or on a level with the third interspace in front (C Jannesco) (See Figs 10 and 11, showing extent of pleura [illegible] ig 9 [illegible] owing approximation of the pleuræ at [illegible] th and [illegible] vertebræ)

When the pleura is [illegible]

RADIOGRAPH No 3



above, at the apex, it is attached to the innominate vein or the *scalenus anticus muscle* and further out to the subclavian artery and brachial plexus The upper curve is flattened or concave in the center, it extends to a level with the neck of the first rib, but it is about three-fourths of an inch above the inner end of the clavicle The attachment to the innominate vein and subclavian arteries are important factors in pneumectomy for apical disease, as adhesions are almost certain to exist Visceral and parietal adhesions of the pleura at this point occasionally produce a paralysis of the abductor muscles of the vocal cord on that side and the symptoms of laryngeal paralysis[10]

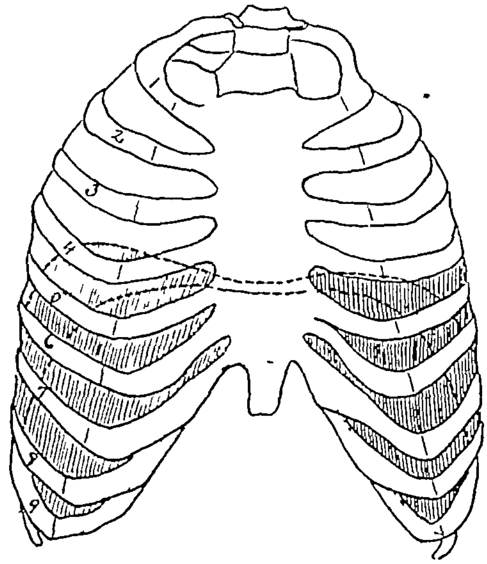


Fig 7

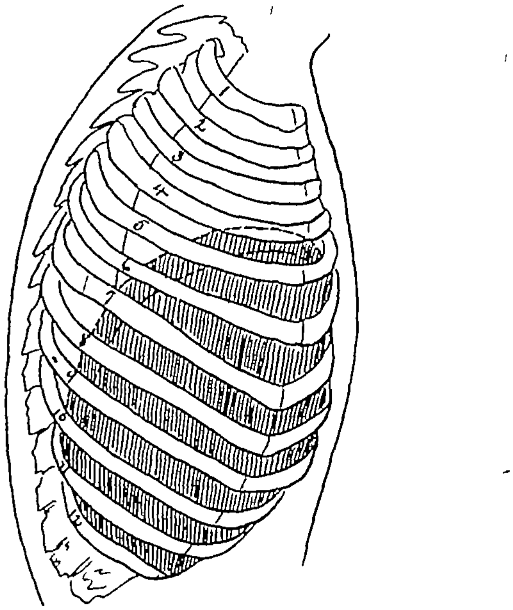


Fig 8

Figs 7 and 8 —Highly arched diaphragm from front and side The upper dotted line represents it when relaxed (expiration) and lower line when contracted (inspiration)

The lower limits of the pleura are somewhat variable, on the right side in front it is attached to the sixth costal cartilage, the sixth space or the seventh rib and cartilage From here it passes outward and downward to the eighth, ninth, tenth and eleventh ribs in an undulating and irregular manner and to the head of the twelfth rib and its vertebra It often extends an inch to an inch and a half below the twelfth rib, and even below the costal arch along the margin This occurs most frequently upon the left side, as on this side it is as a rule five-eighths of an inch lower all around than on the right (See Figs 10, 11) The pleura diaphragmatis is deflected from these attachments and completely covers the diaphragm except at the mediastinum, it is thin and firmly attached The sternal attachment of the pleura varies, it recedes gradually from the center at the lower margin of the fifth space on the right side, it recedes more abruptly from the fourth rib on the left side, exposing the pericardium in the fifth interspace immediately to the left of the sternum The pericardium may be opened in this position without interfering with the pleura The anterior attachment of the right pleura often extends to the left of the median line and even to the left margin of the sternum In normal condition the visceral and parietal pleuræ are in close contact, effusion, hemorrhage and pneumothorax may change the positions

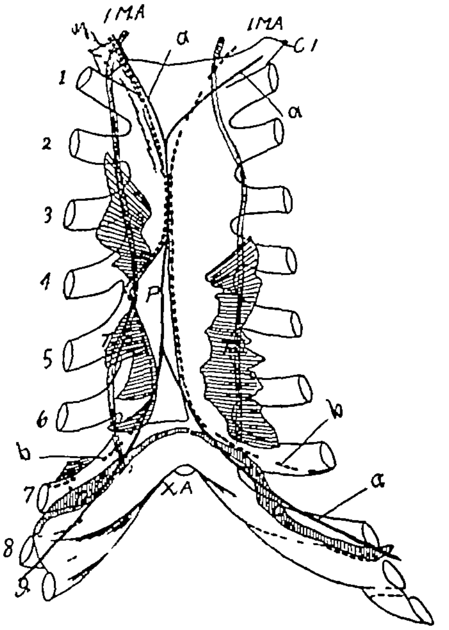


Fig 9 —X.A xiphoid appendix Cl clavicle, T S triangularis sterni I M A , internal mammary artery D diaphragm P , pericardium a line indicating usual position of pleura b, dotted line indicating unusual position of pleura

The lungs —The lung is an irregular, pyramidal semi-cone, concave in its center or hilum formed to the mediastinal contents, concave on its under surface for its adaptation to the diaphragm, it is convex and undulating in its entire outer surface It does not extend to the limitations of the pleural cavity in many positions, particularly at its lower margin The lower margin of the right lung starts at the cartilage of the sixth rib, it passes obliquely outward and downward to the seventh interspace in the mammary line and then almost vertically backward to the end of the eleventh rib On the left side it is about three eighths of an inch lower than on the right except in the incisura cardiaca, where the pericardium is exposed It can be seen in comparing this margin with the lower boundaries of the pleura that the latter extends from one to one and one-half inches below the border of the lung Sappy claims that the lung extends as far as the border of the **tenth** rib behind and only to the fifth rib in front on [illegible] to the sixth on the left side The [illegible] regarding the thickness and shap is erroneous, as it is believed to extend almost inward from the margin described, while in reality the under surface is represented by an irregular conical excavation (formed by the diaphragm) extending from its base one inch to the inner side of the lower boundary of the lung all the way around up to a level with the fifth rib in the center near the hilum of the lung (See Fig 12) The degree of elevation of this cone is changed in pathologic conditions In intrapleural effusions it may be depressed to a level with the eighth interspace (See Figs 10, 11) With subphrenic pathologic products it may be elevated to the third interspace, in explorations with the needle the diaphragm may be punctured and the location of the exudate miscalculated, as the following case illustrates

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[10] Fowler and Godlee

J C, male, age 44, butcher, had suffered from dysentery for three weeks, was attacked with severe pain in the right side near the costal arch, this was rapidly followed by chills and fever, temperature reaching 105 3 degrees Patient rapidly assumed a typhoid condition, low muttering delirium, dry tongue, tremor, etc When the author saw him in consultation the dulness extended to the nipple in front and an inch above the angle of the scapula behind, there was a slight deviation with change of position, there was bulging of the intercostal spaces, and the line of dulness extended two inches below the costal arch The diagnosis of hepatic abscess with subphrenic and intrapleural rupture was made An exploratory puncture in the seventh interspace, scapular line, first, on withdrawing the piston gave a clear fluid, the needle was introduced an inch further and the syringe filled with pus, diagnosis was changed to subphrenic, hepatic abscess Operation proved the correctness of the latter diagnosis The fluid first withdrawn was the secretion from the inflamed diaphragmatic pleura

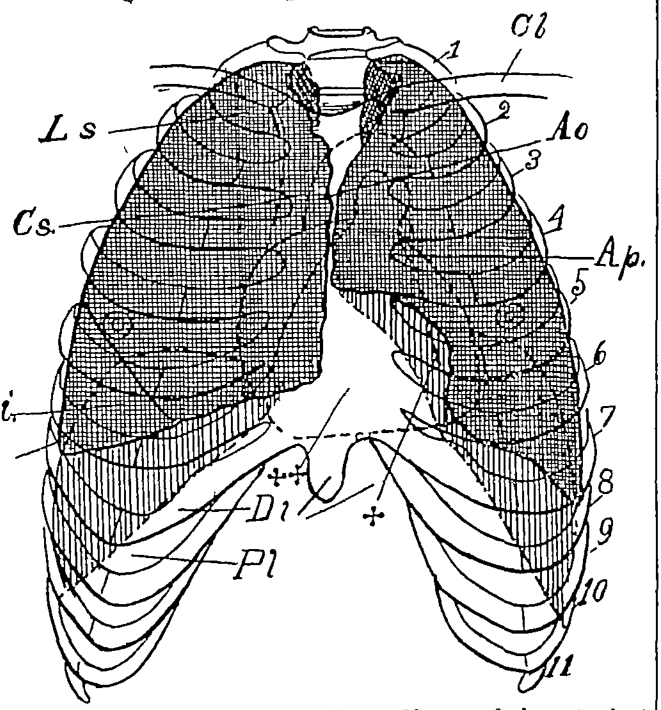

Fig 10 —Front of chest showing relation of lungs and pleura to chest wall 1 to 11, ribs, Cl clavicle D diaphragm Di, insertions of diaphragm Ao, aorta Ap pulmonary artery X incisiona cardiaca XX, pericardium in contact with chest wall Ls upper lobe of lung, Lm middle lobe of right lung, Li lower lobe of lung

The apex of the lung is blunt and shows a depression where it is adapted to the subclavian artery, from which it is separated only by the pleura The right lung is divided into three lobes by two fissures, the left into two lobes by one fissure The great fissure in the right lobe separates the lower from the upper and middle lobes, and extends from beneath the second dorsal spine at first longitudinally outward and then obliquely downward to the lower border of the lung opposite the middle of the sixth costal cartilage, and usually passes below the nipple (See Figs 13, 14) The middle fissure originates about the middle of the great fissure beneath the junction of the fourth interspace with the middle axillary line and passes almost horizontally forward following the line of the fourth rib to the fourth costal cartilage It separates the upper from the middle lobe. These fissures extend almost to the hilum of the lung (See Fig 15) In disease the pleura lining the fissure becomes adherent, obliterating the fissures, not infrequently these fissures are the seat of circumscribed serous and purulent pleuritic effusions and are mistaken for cysts and abscesses of the lung The fissure in the left lung corresponds to the great fissure of the right except that it passes a little higher in front at the cardiac margin of the lung (See Figs 16, 17)

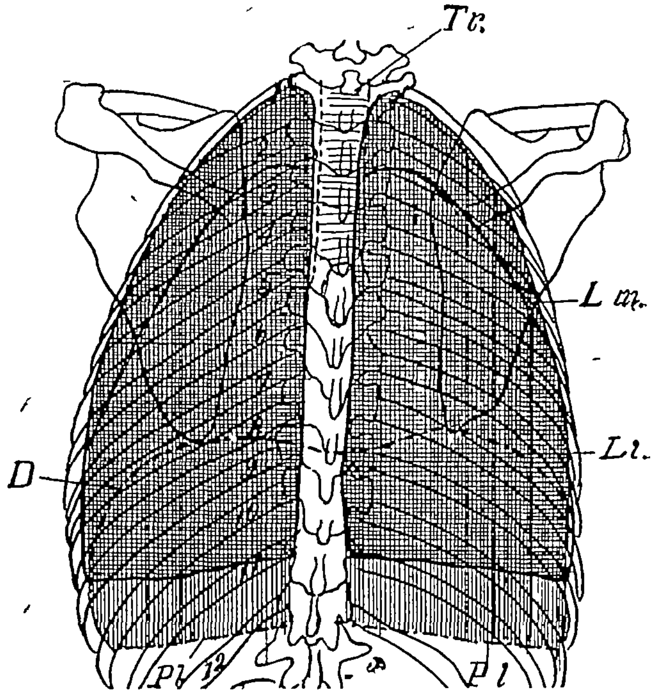

Fig 11 —Back view of chest, showing relation of lungs and pleura. 1 to 11, ribs Tr, trachea D, diaphragm Pl, Pleura, Lm, middle lobe of right lung Li lower lobe of lung

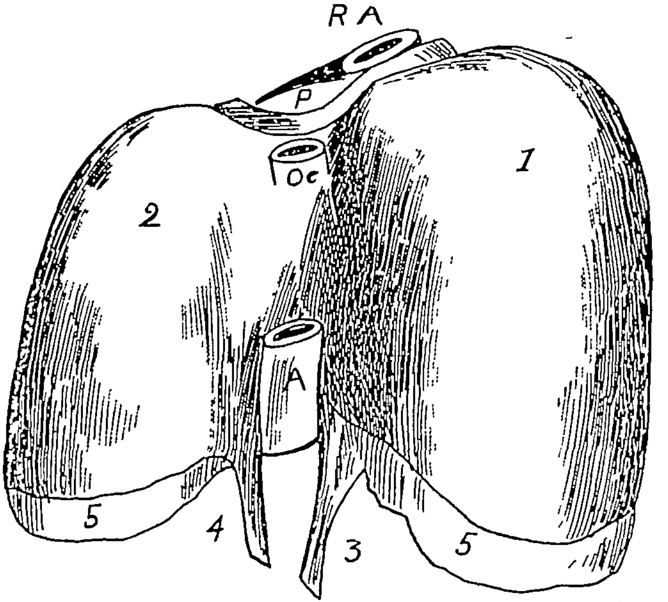

Fig 12.—The diaphragm seen from behind 1 right side of tendon 2, left side of tendon 3 right crus 4 left crus 5 origin from ribs A, aorta Œ esophagus P pericardium RA right auricle

The pleura covering the lung is thin and firmly adherent Anomalies as to the number of lobes and fissures are not uncommon, although the absence or non-development of a lobe is very rare, the most frequent anomaly is the absence of a fissure Accessory lobes in the right lung have been recorded In the dog as many as six have been found

The right is the larger lung An irregular notch in the left lung exposes the pericardium and gives the area of precordial dulness, which is irregularly triangular in shape, its first point of the base is at the middle line of the sternum opposite the fourth costal cartilage, the apex of the triangle is at the point of the apex beat, and the second point of the base is at the junction of the ensiform cartilage and the body of the sternum The hilum or root of the lung is situated in a depression at about the middle of the lung between its apex and its lower margin about equidistant from its anterior and posterior borders, it is occasionally nearer the anterior The root is composed of the bronchus and its subdivisions, the large blood vessels, nerves, lymphatics and glands, surrounded by areolar tissue and reflections of the pleura, the root is on a line with the fifth, sixth and seventh dorsal vertebræ and almost directly behind the fourth costal cartilage and third interspace, on a line with the longitudinal fissure The order of arrangement in the root (see Fig 18), on the right side from above downward is, first, the pulmonary artery and its subdivisions, a little below that level and just behind is the eparterial bronchus, lower is the main bronchus behind and the pulmonary vein in front and a few smaller branches below, the left auricle presses in close to the bronchus behind and the right auricle a little lower in front The order of arrangement in the root on the left side from above is, pulmonary artery and subdivisions, the bronchus and subdivisions of pulmonary veins and the pulmonary artery The root of the right lies behind the superior vena cava and part of the right auricle The vena azygos arches over it to enter the superior vena cava The root of the left lung passes below the arch of the aorta and in front of the descending aorta, appearing to come out of the hook formed by the aorta It is situated a little nearer the anterior wall of the chest than the right The phrenic nerves pass in front of the roots on both sides and the pneumogastric behind The bronchi are in the same relative position, posterior to the large vessels, they can therefore be ligated in front separately from the bronchus in pneumectomy The vena azygos must not be included in the ligature and must be carefully separated from the adhesions to the lung, so that the root of the lung can be brought well forward for ligation

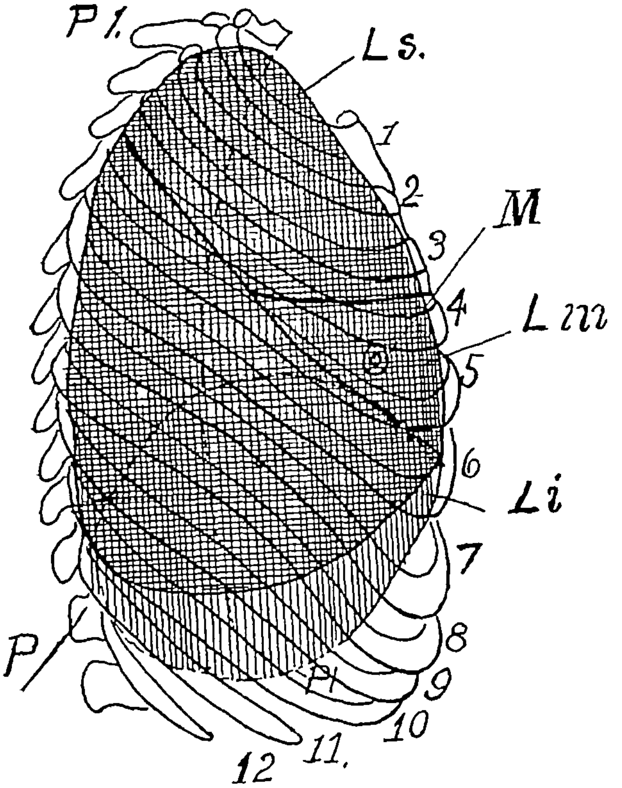

Fig 13 —Right side of chest P1 spinus process of first thoracic vertebra P12. spinus process of twelfth thoracic vertebra, 1 to 12, ribs M. nipple Ls upper lobe of lung Lm, middle lobe of lung, Li lower lobe of lung, Pl pleura

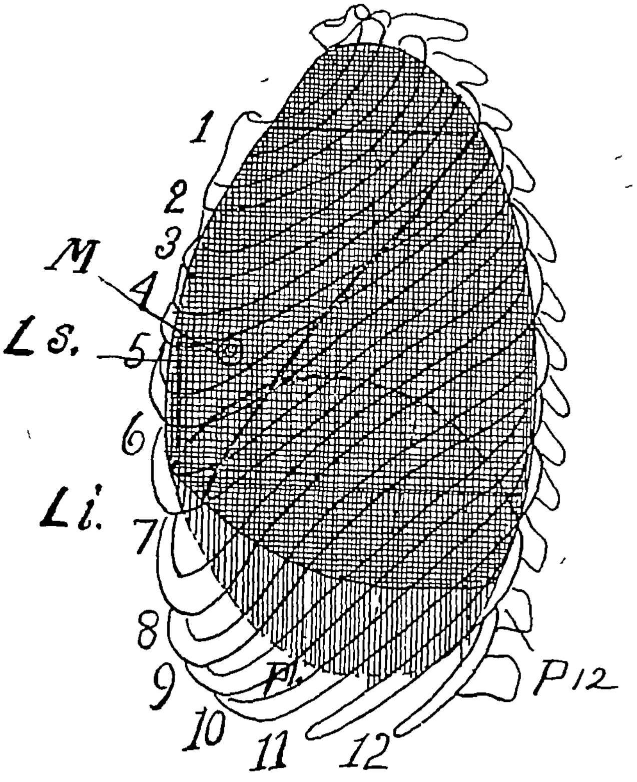

Fig 14 —Left side of chest P1, spinus process of first thoracic vertebra P12 spinus process of twelfth thoracic vertebra, 1 to 12, ribs M nipple D diaphragm Pl pleura Ls, upper lobe of lung Li lower lobe of lung

The trachea and bronchi —The trachea which has from fifteen to twenty cartilaginous rings measures four to four and one half inches in length and three-fourths to one inch in diameter, it is situated in the central portion of the mediastinum, the arch of the aorta passes across it in front just above its bifurcation (See Fig 19) It divides into two bronchi, the right and left, on a line with the fifth dorsal vertebra, which lead to the corresponding lungs The right bronchus is about one inch in length, it is shorter and wider than the left, and in direction is more continuous with the line of the trachea (Aeby), in size the transverse section of the tubes is in proportion of 100 to 78 The right is composed of six to eight cartilaginous rings, while the left, which is two inches in length, has nine to twelve tilaginous rings The rings are thin two-thi of the circle of the bronch is membranous, resem ticular The right bronchus gives off a branch to the upper lobe about an inch from the margin of the trachea The external covering of the larger divisions of the bronchi is made up of connective tissue and a few muscle fibers The connective tissue is greater behind, as it takes the place of the cartilage in that portion of the circle This covering can not be peeled off the bronchus without laceration, rendering it impossible to make a "cuff" when the bronchus is amputated, as we do in amputation of the appendix The mucosa is a thin, delicate membrane made up of lymphoid cells and ciliated epithelia The submucosa which secures the mucosa to the cartilage is thin and friable and easily destroyed with pressure It can not be peeled from the inner surface of the bronchus, nor can it be invaginated for the purpose of producing occlusion of the bronchus after pneumectomy The histology of its method of closure will be described in the experiments

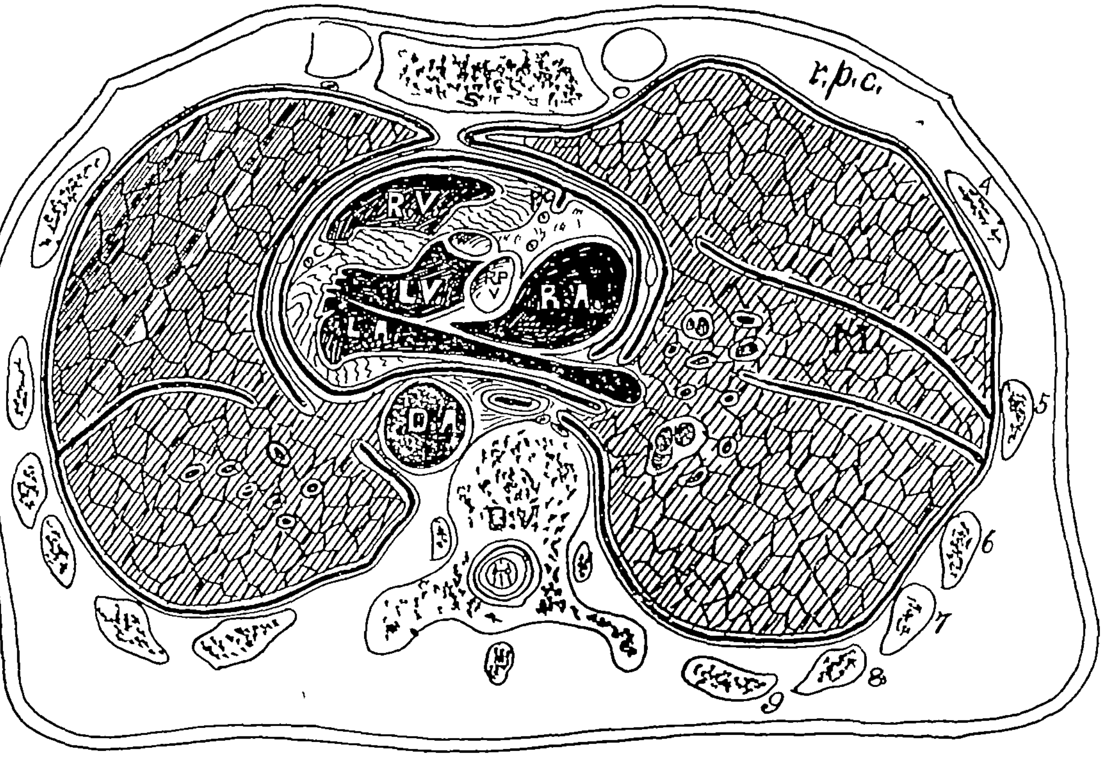

Fig 15 —Horizontal section of the thorax of a man aged 57 at the level of the nipple as seen from above N nipple M middle lobe of right lung R A right auricle, R V right ventricle L A left auricle L V left ventricle R P V right posterior valve of aortic orifice, r p c right pleural cavity

PHYSIOLOGY OF RESPIRATION

Respiration is essentially the intake of oxygen and the output of carbon dioxid by living cells There are but two acts in the process, the external, the exchange of gases in and out of the blood, and the internal, the exchange from the blood to the cells Mayow in 1668 discovered the real function of respiration, and declared that it was the absorption of nitro aerial gases (oxygen)[11] He also showed its similarity to combustion Hale showed in 1726 that "noxious vapors were exhaled,"[12] and Black[13] showed these gases to consist of a "fixed air," carbon dioxid Priestley 1772, demonstrated that plants restored the property of supporting animal life to air which had been vitiated by animal respiration or by combustion Lavoisier and LaPlace, 1777, taught that animal heat was the result of the oxidation of the tissues and was a process of combustion, they believed the action took place in the lungs, but admitted that it might be in other organs of the body It was later shown that the quantity of oxygen consumed is generally much less in cold-blooded than in warm-blooded animals Most insects are marked exceptions to this rule, as they have a metabolism equal to that of the larger mammals The respiratory exchange in warm-blooded animals is influenced by age, size of body, external temperature, muscular activity, rest, digestion, hunger and hibernation Cold increases and heat lessens the respiratory exchange It is the reverse of what has been observed in cold-blooded animals It was illustrated by Levoisier and Seguin, who showed that a man at rest at a temperature of 32 5 degrees absorbed in an hour 34 49 grams of oxygen, but at a temperature of 15, 38 31 grams of oxygen Exercise increases the absorption of oxygen (See Schaefer's Physiology, London, 1898) The hyperpnea following exercise is not due to excess of carbon dioxid in the blood as the result of increased metabolism, as the blood contains more oxygen and less carbon dioxid than during rest[14] It is probably due to some product of muscular activity which is absorbed by the blood and carried to the medulla, there to stimulate the respiratory center Tartaric acid injected into the blood increases respiration, sodium hydrate (n 1 sol) diminishes respiration[15]

A man at work absorbs 91 2 grams of oxygen an hour, while at rest he absorbs 38 3 grams an hour at a temperature of 15 degrees C[16] The carbon dioxid eliminated by a man at rest, asleep, is 161 6 c c per hour During a walk at three miles an hour, it is 851 2 c c an hour[17] The percentage of carbon dioxid in the air exhaled is not changed, but the volume of air is increased

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[11] Phil Trans London 1666 p 424 Ibid 1670 pp 2011-2035
[12] Statical Essays 2d edition 1731 Vol 1 p 236
[13] Lectures on Chemistry., Edinburgh, 1803.
[14] Mathieu et Urbain Arch de Physiol
[15] Lehmann Arch f d ges Phys Bd xliii p 284
[16] Levoisier Loc Cit
[17] Smith Phil Trans Vol cxlix Pt 2 p 681

Influence of food—The ingestion of a meal upon respiratory exchange causes a marked intake of oxygen and output of carbon dioxid, due to the chemical changes which take place in food during digestion and absorption, and the increase of muscular and glandular activity of the alimentary tract Smaller animals have a greater respiratory exchange than larger ones, other things being equal

Influence of day and night—There is a marked difference in the quantity of carbon dioxid produced between day and night The increased exchange reaches its maximum from 11 A M to 1 P M, and its minimum from 8 to 9 P M [18] The respiratory exchange is greater in the young than in the aged per kilogram under the same conditions [19] Amphibia respire through the skin and mucosa of the alimentary tract, and in some this respiration is greater than that of the lungs Cutaneous and alimentary respiration in mammals has been a field for considerable controversy, but it is the consensus of opinion that respiration takes place through the skin and alimentary canal (See Cruikshank, Experiments on the insensible perspiration of the human body, showing its relation to respiration, 1871) [20]

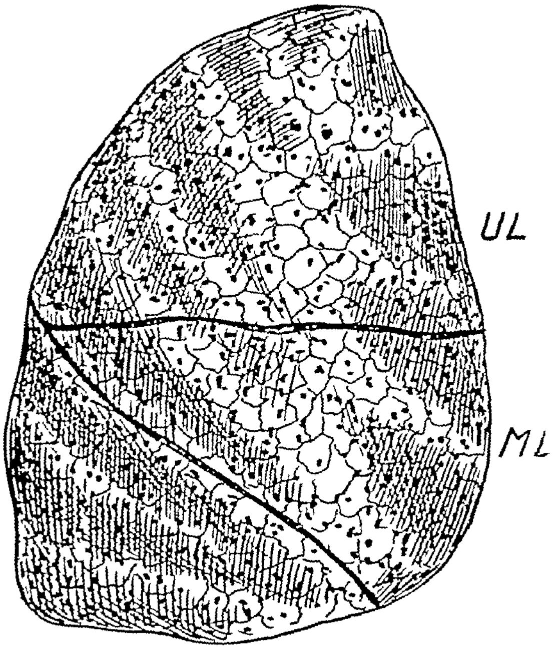

Fig 16 —Outer aspect of right lung U L upper lobe M L middle lobe of lung L.L lower lobe of lung

The respiration of fetal life, or exchange of carbon dioxid and oxygen, is very much less than in adults, about the proportion of 1 to 100 [21] The respiration of the embryo in the egg of fowls and snakes takes place through the shell If the egg is kept in a warm atmosphere of hydrogen for more than twenty-four hours the embryo ceases to live The development of the embryo is neither hastened nor delayed if the egg is kept in an atmosphere of oxygen [22] This is in consonance with the exchange of oxygen in pulmonary respiration

The amount of respiratory exchange in animals under normal conditions is not augmented by an increase of oxygen in the inspired air, but under pathologic conditions where the respiration is interfered with and where the blood is abnormally venous, an increase of oxygen in the air inspired produces an increased exchange of gases [23] This is a physiologic indication for the clinical use of oxygen in certain pathologic conditions of the respiratory apparatus, as pneumonia, compression of the lung, etc , and is also a positive indication for the administration of oxygen by inhalation after all operations which diminish the respiratory area of exchange

The inhalation of air with a diminished quantity of oxygen produces marked symptoms, as observed in mountain climbing and balloon ascension They are due to anoxemia, as was shown by Jourdanet [24] The effect produced by air vitiated by repeated respiration is due to the deficiency of oxygen and the presence of carbon dioxid The hyperpnea is due to the excess of carbon dioxid and not to the deficiency of oxygen When the carbon dioxid exceeds 3 per cent the hyperpnea is appreciable, at 10 per cent it is marked, the frontal headache is due to the excess of carbon dioxid When the oxygen is diminished to 12 per cent the hyperpnea is appreciable and is excessive at 6 per cent [25] Warm-blooded animals confined in a limited quantity of air die from want of oxygen and the blood is venous The lack of oxygen produces its effect before the accumulation of carbon dioxid is sufficient to produce poisoning Death takes place when the oxygen is reduced to 3 per cent and the carbon dioxid increased to only 15 per cent The fatal amount of carbon dioxid is 25 per cent

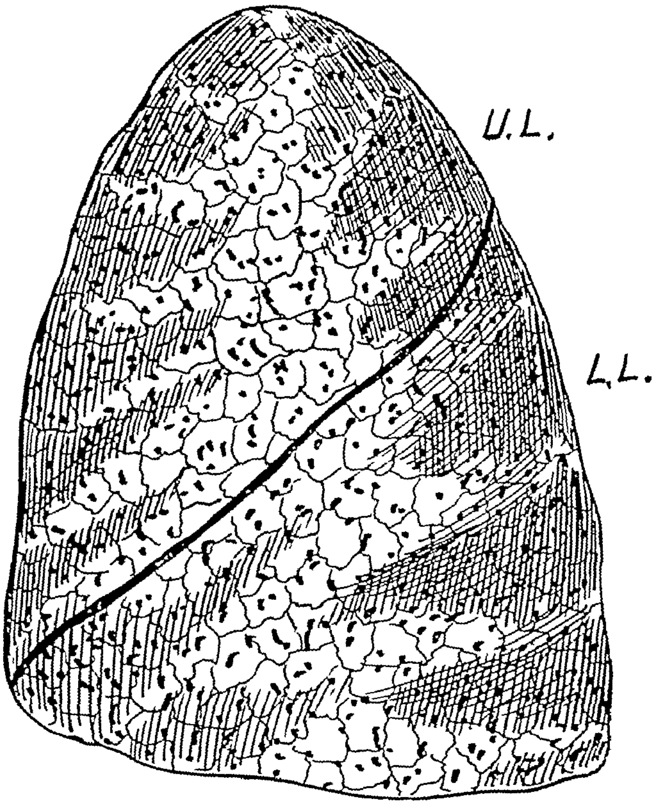

Fig 17 —Outer aspect of left lung U L upper lobe of lung L L, lower lobe of lung

The respiratory exchange in children and animals immediately after birth is very much less than later in life, this explains the fact that at this time they may be restored by artificial respiration a much longer time after respiration has ceased than could be accomplished later in life The increase of respiration during exercise does not seem to be due to an increase of carbon dioxid or lack of oxygen in the blood, but to the accumulation in the blood of some product of muscular activity If the exertion be continued its effect ceases, the pulse becomes slow the respiration less frequent, and the man is said to have his second wind, after which the same degree of exertion may be continued with comparative comfort for a long time

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[18] Vierordt Phys Carlsruhe 1845 Wagner s Handworterbuch Bd ii u. iii p 883

[19] Ann of Chem and Pharm 1843 Bd xlv, p 214

[20] Aubert and Lange Arch f die ges Phys 1872, Bd vi p 589

[21] Zuntz Arch f ges Phys 1877 Bd xiv p 605

Pott Arch f ges Phys, 1883, Bd xxxi, p 268

[23] Levoisier et Seguin Hist Acad roy d Sc Paris 1789 p 566

[24] Jourdanet Paul Bert s Work

[25] Haldane and Smith Jour of Path and Bact., 1892 Vol i p 875

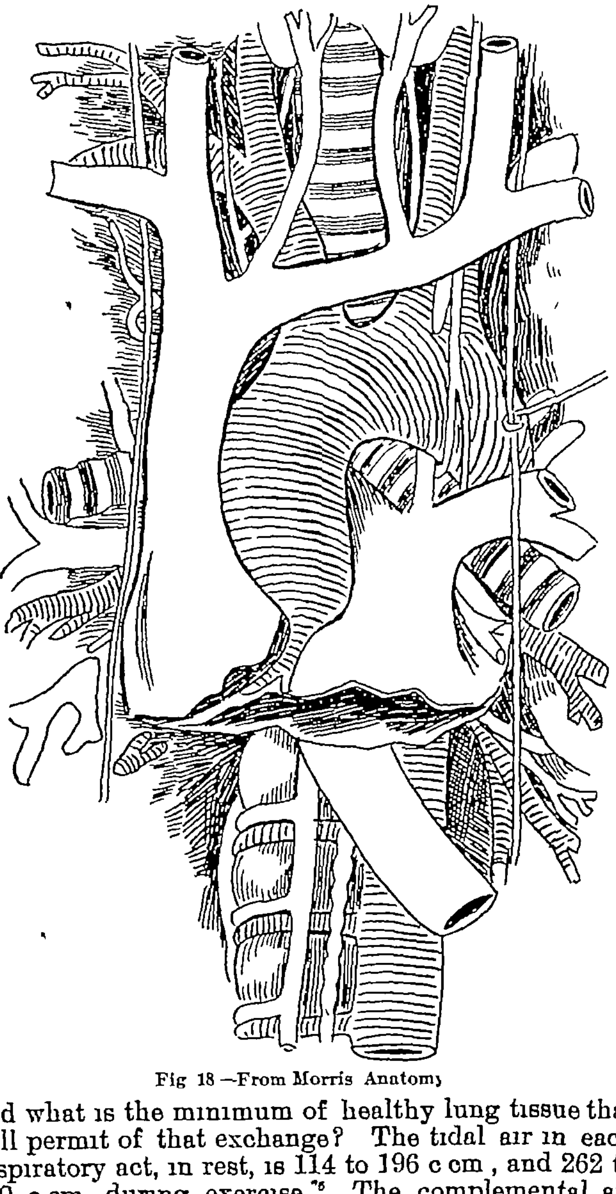
Fig 18 —From Morris Anatomy

The quantity of air exchanged in each respiratory act, is a matter of great importance from a medical as well as a surgical standpoint What is the minimum tidal exchange which is consistent with life in man and what is the minimum of healthy lung tissue that will permit of that exchange? The tidal air in each respiratory act, in rest, is 114 to 196 c cm, and 262 to 360 c cm during exercise [26] The complemental air (the deepest inspiration) is 1722 to 1804 c cm (Hutchinson) The reserve air which can be expelled after an ordinary expiration is *1148 to 1804 c cm* The residual air (mean) which remains in the lung after a forced expiration is 672 c cm [27] The vital capacity, quantity of air *exchanged between the extremes of* inhalation and exhalation, is 3558 c cm (mean for 1923 men)

A comparison of these figures shows what a great reserve respiratory power we have, and explains with what ease respiration may be carried on with a large proportion of the respiratory tract functionless Our extreme capacity is 3558 c cm, in an ordinary exchange it is from 114 c cm at rest, to 360 c cm in exercise, therefore the extreme capacity is equal to at least ten times the quantity of ordinary exchange Pathologically we recognize that with one lung entirely disabled by pleuritic effusion and the capacity of the other lung greatly diminished by displacement of the mediastinal septum, the respiratory exchange is still ample to sustain life These physiologic and pathologic facts prove that with our surgical technic sufficiently advanced an entire lung may be removed, as the body can dispense with it

The respiratory metabolism does not appear to be affected by the frequency of respiration except as *Pflüger has shown, to the extent of the increased* demand made by the simple action of the respiratory muscles The mean carbon dioxid elimination at seven respirations per minute in fifteen minutes is 7 836 grams, while in the same individual at sixty respirations per minute it is 7 868 grams The conclusion therefore is, that the respiratory activity is determined by the *needs* of the tissues and not by the amount of oxygen carried to the blood The temperature of the inspired air in man is raised to that of the body before it reaches the smaller bronchi The volume of expired air is 1/50 less than the inspired The volume of oxygen in arterial blood in the dog was found to be 22 per cent The volume of carbon dioxid in the blood varies greatly but is usually only about 1/5 or 30 volumes per cent of what it is capable of holding when shaken in pure carbon dioxid which is 150 volumes per cent The proportion of oxygen in venous blood as compared with arterial blood is 5 43 per cent in venous to 20 75 per cent in arterial, carbon dioxid 61 8 per cent in venous, 47 33 per cent in arterial The blood will not absorb an excess quantity of oxygen, no matter how great its excess in the air inhaled The union is a loose chemic combination between the oxygen and certain constituents of the blood, principally the erythrocytes [28] The hemoglobin in these erythrocytes is the absorbing element [29] Nitrogen is merely held in solution Carbon dioxid is held in chemic combination with the pigment of the red cells and the alkalies of the serum, and is also loosely dissolved in the blood The proportion of loose to firm is as 2 *to* 3 5 (Prior) The alkalies of the blood are the most important constituents for holding in solution the carbon dioxid The blood corpuscles contain about one third of the total carbon dioxid held in the blood The red cells contain 10 volumes and the white 2 5 volumes in 100 volumes of blood [30]

Causes of exchange of gases —At a temperature of 0 and a pressure of 760 mm The air inspired contains 20 96 volumes per cent oxygen, the air expired contains 16 00 volumes per cent oxygen, the air inspired contains 0 03 volumes per cent carbon dioxid, the air expired contains 4 00 volumes per cent carbon dioxid, the air inspired and expired contains about the same volume per cent of nitrogen, 79 01

Experiments have not accurately *demonstrated the* cause of the exchange of gases in the lung It is the accepted provisional theory that the exchange of gases between the blood and the air in the lungs is effected by physical and chemic means, the most important of which is diffusion [31] The surface through which this diffusion takes place is 90 square meters, and through this there are diffused 300 c c of carbon dioxid and about the same quantity of oxygen per minute in ordinary respiration The velocity of diffusion is proportionate to the density of the gas, therefore the velocity of carbon dioxid is about twenty times greater than that of oxygen (Zuntz) The question which concerns the surgeon in this relation is how much of the 90 square meters of this surface can be dispensed with suddenly and how much can be dispensed with slowly, the former by amputation or compression of the lung and the latter by disease processes? Clinical experience shows that one lung may be suddenly rendered entirely functionless without materially embarrassing respiration, as in pneumothorax and in hematothorax, and as I have demonstrated experimentally and therapeutically by nitrogen gas injections into the pleura We find pathologically that one entire lung and a considerable part of the other may be rendered functionless by diseased conditions before the apnea becomes marked and distressing The difficulty in respiration in the latter stages of tuberculosis is due to two causes 1, to the diminution of the pulmonary tissue capable of performing its function, and 2, the principal one, to the restriction of the respiratory motions of the chest produced by the adhesions and the consolidation and cicatrization of the diseased portion of the lung This defective motion does not produce the free ingress and egress of air to the functionating portion and thus does not cause sufficient respiratory exchange

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[26] Hutchinson Thorax Todd s Cyc of Anat and Phys Vol iv 1067

[27] H Davy Researches Concerning Nitrous Oxid London, 1800, p 399

[28] Liebig Ann d Chem u Pharm 1851 Bd lxxix s 112

[29] Pflüger Arch f d ges Phys Bonn 1868 Bd i s 78

[30] Setchinow Cent f med Wissenschaft Berlin 1877

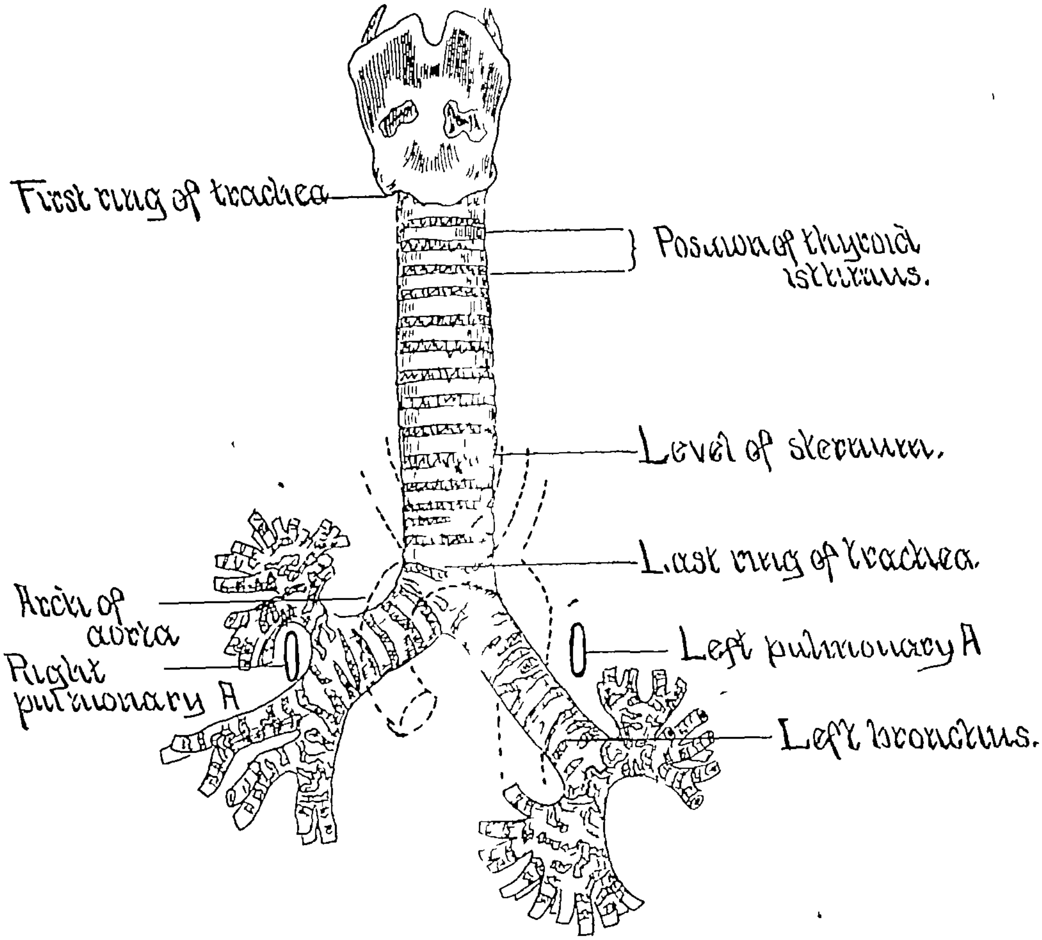

Fig 19 —From Morris' Anatomy, showing relation of arch of aorta to trachea and bronchi

The internal respiratory exchange, the exchange of gases from blood to tissue, is due to the action of the cells themselves, the tissues having great affinity for oxygen, which they even store up for future oxidation They are constantly producing carbon dioxid, this can only continue for a limited period of time in the absence of oxygen The various tensions of gases in the different fluids of the body bear an important relation to their exchange

(To be continued)

DIABETES MELLITUS AT THE MASSACHUSETTS GENERAL HOSPITAL FROM 1824 TO 1898 A STUDY OF THE MEDICAL RECORDS

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The examination of the records of the cases of saccharine diabetes treated in the wards of the Massachussetts General Hospital during the past seventy-four years was begun for the purpose of seeking evidence with regard to the pancreatic origin of this disease (See *Yale Medical Journal*, 1898, iv, 275) Since several hundred volumes were to be searched it seemed desirable to obtain at the same time information upon other points which might contribute to the

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[13] Text book of Physiol E A Schaefer London, 1898

statistics of diabetes Facts of interest in diagnosis and treatment were elicited as the study progressed and this paper is offered rather as a historical sketch of the progress of a disease drawn from the original records than as an attempt to advance in any way our knowledge of the subject Since diabetes mellitus was first sharply differentiated from diabetes insipidus early in the present century, the hospital records may be considered to be nearly as old as is our knowledge of the disease in question

During these seventy-four years the total number of cases of diabetes mellitus treated in the medical wards was 172, but of these, 9 were readmitted, making 181 separate entries The following table shows the variation in the number of such patients during successive periods of years and their proportion to the total number of cases treated during the same periods

Period	Total number of patients	Number of cases of diabetes	Per cent
From 1824 to 1840	5 828	7	13
From 1840 to 1865	6,136	16	26
From 1855 to 1870	8 660	24	27
From 1870 to 1885	11,690	39	33
From 1885 to 1898	16 085	86	53

It appears from this table that within the past thirteen years as many cases of diabetes were admitted to the hospital as in the previous sixty-one years and the per cent in the past thirteen years in proportion to the total number of hospital entries has increased fourfold over that of the first fifteen years This fact is not due to any recent increase in the number of beds open to this class of patients, nor, presumably to any considerable excess in the frequency of this disease in the region from which the hospital receives its patients Whatever may be its cause this occurrence is to be regarded as evidence of the wholesome tendency of diabetics to place themselves under careful medical supervision for such length of time as shall permit suitable observations to determine the severity and controllability of the disease, that the future conduct of the patient may accordingly be regulated

Of the 172 cases, 127 (or disregarding fractions, 74 per cent) were males and 45 (or 26 per cent) were females The oldest patient was 73 years of age and the youngest 5 years, the average age of 161 patients being 33 4 years The average age among 40 female patients was 39 1 years, being higher than that in 121 males in whom it was 31 4 years The following table represents the time of life at which the disease began

Age	Number of cases	Per cent
From 0 to 10 years	3	1 8
From 10 to 20 years	15	8 8
From 20 to 30 years	41	24 1
From 30 to 40 years	48	25 8
From 40 to 50 years	29	17 1
From 50 to 60 years	28	16 5
From 60 to 70 years	11	6 4

Diabetes thus is shown to be a disease predominantly affecting the middle third of life, though sparing neither the child of five nor the senior of seventy-three

But one of the patients was a negro, a further illustration of the rarity of diabetes in this race, although Tyson (Practice of Medicine, 1896, 751) has met with several instances Ninety-seven of the patients lived in the United States, and 83 claimed this country as their birthplace Thirty-nine of the patients were born in Ireland, 11 in the British Provinces, 9 in England, 4 in Scotland, 7 in Germany, 2 in Sweden and 1 in Denmark Forty-three of the patients were mechanics, 23 servants, 17 laborers and 13 farmers Of merchants there were 5, and of clerks 7 There were 5 mariners and 4 teamsters Although four of the patients were students there were but two professions represented, a clergyman and an artist being included among the entries There were single or a few representatives of several other occupations, and conspicuous for its absence was that of liquor dealer

In 42 cases the question of an inherited tendency to the disease was raised and this factor was stated to have been present in 10 patients and absent in 32 In one case the father died of possible diabetes and this disease was the cause of the death of a brother and his daughter The brother of one diabetic patient fell upon the ice, striking his head and died of diabetes four days later In three of the cases the symptoms of diabetes came on within a few weeks after severe injury

One of these patients while working in a mill in July so strained his back by lifting a heavy weight that he was unable to accomplish much afterward on account of supposed weakness of the spine In August the appetite became increased and in December he entered the hospital for treatment of diabetes The second was buried in a sand bank three months before entrance and was taken out unconscious Six weeks later thirst made its appearance as the first symptom indicative of the onset of the diabetes The third fell fourteen feet and struck on the back of the head He was unable to work for a fortnight Very soon afterward he began to have great thirst, hunger, and frequent micturition of large quantities of urine The disease began in a female patient one month after very hard work in caring for a sick sister The possibility of contagion was entertained in the case of a servant whose mistress was suffering from a severe variety of diabetes

Post-mortem examinations were made in 15 of the 47 fatal cases As is usual in this disease no characteristic lesions were found The liver generally was normal in appearance although sometimes enlarged and in one instance it was rather small The kidneys as a rule were normal, were enlarged in one instance, congested and with fat drops in the cortex in another, enlarged and hemorrhagic in a third, enlarged and infiltrated with round cells in a fourth The stomach was large in two cases and Brunner's glands were found "developed" in a case under the care of Henry I Bowditch in 1848 The condition of the pancreas was not mentioned in seven of the cases This gland was stated to be normal in five and small in three instances In one of the three its tissues were not remarkable, in another there was a moderate infiltration of fat tissue around the head of the gland, and in the third the weight was recorded as an ounce and a half, the section showing a coarsely granular surface

No attempt has been made to note the relative frequency and the severity of the various symptoms Particular attention has been paid, however, to the records of the condition of the urine, since they furnish a valuable commentary of the progress of our knowledge concerning the methods of studying this secretion

In the earliest volumes of the records especial importance was attached to the measurements of the quantity of urine passed as compared with the quantity of liquids ingested, since formerly it was the belief that patients excreted more urine than they drank liquid As an illustration the following table is copied from the record of a case

TREATED IN 1861

Date	Water drank—Pints	Urine voided —Pints	Specific gravity
April 28	7½	23	1050
April 29	4½	9+	1030
April 30	4	11	1031
May 1	3	8	1038
May 2	4	9	[illegible]
May 3	4	10	1027
May 4	4½	10	1025
May 5	About 4½	5	1025
May 6	About 6	10	1027
May 7	About 7½	11	1025
May 8	Out of house	6	1025
May 9	Out of house, 5	9	1030
May 10	Not known	6	1030
May 11	Not recorded patient went frequently to stool		
May 12	6½	10	1033
May 13	4½	10	1027
May 14	7	11	1025
May 15	7	10	1024
May 16	6½	10	
May 17	6 bread out	10	1027
May 18	7	10	1030
May 19	8	10	1030
May 20	7	12	1030
May 21	8½	14	1031
May 22	8	18	1031
May 23	7½	14	1038
May 24	10	17	1031
May 25	7 bread renewed	16	
May 26	5½	16	1031
May 27	14	15	1031
May 28		16	1038
May 29	8	16	1034
May 30		10	1032
May 31	6½	10	1032
June 1	7½	12	1030
June 2	6½	9	1021
June 3	7	12	1030
June 4	7½	9	1030
June 5		11	1030
June 6	6½	12	1025
June 7	7½	12	1026
June 8		10	1023
June 9	9	14	1022
June 10		18	1025
June 11	11	18	1020
June 12	11	18	1020
June 13	Out of the house		1021

It is noted, for instance, in Vol 1, that a patient with diabetes simplex from Dec 2 to Dec 11, 1821, ingested forty-five pints and seven gills, but excreted forty-five pints and four gills The first patient who is recorded to have had diabetes mellitus entered the hospital in 1824, and during the first three days of his stay is credited with drinking twenty and one-half pints of fluid, and is charged with passing twenty-five pints of urine

This doctrine of an excess of outgo of urine over income of fluids appears in 1847 in Watson's Practice of Physic (3d American Edition, p 869) as a statement that the "quantity of urine secreted and voided is sometimes enormous, far more than could be supplied by the quantity of fluid taken as a drink"

Twenty years later, Harley in his work on diabetes says (p 50), "diabetic patients generally pass more liquid than they take, about one-fifth or one fourth more"

Lauder Brunton in 1879 (Reynold's System of Medicine, 1879, p 387) opposes this view in the following words "It has been said that the quantity of urine excreted by the patients is greater than that of their beverages, but this can hardly be the case, and the observations which seem to support this view have probably been made for too short a time, the apparent excess being most likely derived from water lodged in the system"

The difficulty of eradicating this erroneous idea is indicated by the fact that a recent graduate of the Harvard Medical School and of the Massachusetts General Hospital, seriously asserted that "it is perfectly well known that a person passes more urine than he drinks fluids" Such a view is based probably upon a misinterpretation of the physiologic teaching that more fluid is eliminated from the body in respiration and in secretion from the various glands than is taken in as liquid In this connection it is interesting to note that a metabolism experiment in diabetes was made at the hospital in 1845 For it is then recorded that "in the last twenty-four hours ingesta were, solid 30 oz, liquid 54 oz Total 84 oz Egesta were, solid 8 oz, liquid 26 oz Total 34 oz Difference 50 oz"

The largest quantity of urine stated to have been voided in twenty-four hours was 576 ounces The record of this patient is, "June 26, 1861, urinated thirty-six times, voided thirty-six pints It contained 3 per cent of sugar, corresponding to 227 *grains in one pint*" *Only six of 166 patients passed* over 300 ounces in one day The highest sp gravity recorded is 1054, although repeatedly it was found above 1045 The highest percentage of sugar mentioned was 12 5 per cent In many instances there was present between 9 and 10 per cent of sugar

The finding of sugar in the urine was determined in the first instance until 1851 by means of the taste The physician in charge sometimes called upon the house physician to apply this test, although a positive statement to this effect is found only in 1844 and again in 1845 It is probable, however, that the patient was occasionally called upon to use this method, for in 1831 the statement appears, "on tasting, as directed to do by the physician it was found sweet" This patient is credited also with the ability to make quantitative determinations in this way, for "he observed, however, that if he relapsed at any time, even in a very slight degree from a rigid animal diet, the urine was increased correspondingly in sweetness and quantity" In another instance it is stated that the urine is "less sweet after eggs" In general the patient at the time of entrance was able to make such positive statements as made apparent the condition of the urine One "reports urine sometimes natural, at others sweet" It had the "sweetest taste," or was "sweetest to the taste" The urine had a "saccharine smell and taste," or presented a "sugary appearance on the shirt," or the "urine upon cloth leaves sticky and sparkling deposit" The intelligence of the lower animals sometimes aided in the diagnosis, for of one patient's urine it is stated that "flies gathered upon places moistened by it" Such everyday methods of diagnosis are still in use, for it is but recently that an office patient stated of her diabetic mother that her "clothes would rattle like starch, so sugary was the water, like brine on the floor"

These rude methods of testing the saccharine condition of the urine were supplemented in 1827 by evaporating the specimen It is recorded "urine yesterday sixteen ounces, seven ounces this morning, sixteen being boiled about two remains (*sic*), resembling molasses, of saccharine smell and taste" In the following year, "urine seven pints, natural appearance, without sediment, not giving syrup on evaporation" It is stated also that eight ounces of urine yielded one ounce of syrup, and at the end of the record of the autopsy of a fatal case it appears that specimens of the saccharin matter and of the nitrate of urea prepared from the urine on different days by Dr Chas T Jackson will be found in the cabinet of the Soc for Medical Improvement, Nos 566 and 567

In 1833 we learn that "one quart of urine boiled to the consistency of thick molasses weighed two and one-half ounces On the 12th the same quantity boiled as before weighed three ounces" This method was still in vogue in 1842 for "two ounces carefully evaporated gave about a drachm of clear extract of the color and consistency of treacle," and four years later the evaporating method still was employed

In 1841 Trommer's test was made known (Annal der Chemie und Pharmacie, 1841, xxxix, 360) and in 1842 the hospital records state that the "urine was unaffected by heat, nitric acid or aqua potassa" In this year the fermentation test also was first employed

In 1846 the following letter from Dr John Bacon, Jr, is entered in the records, and shows the results of his investigations for the purpose of determining the nature of the sugar to be found in diabetic urine It seems worthy of reproduction as an illustration of the scientific methods employed, even fifty years ago in the investigation of disease

Boston, May 12, 1846

Dr J B S Jackson

Dear Sir,—The microscopic examination which I have made at your request, of the sugar from diabetic urine has afforded some results worthy of mention The specimens of saccharine urine placed in my hands were from two diabetic patients now in the hospital My first attempt was to obtain the sugar in a crystallized state by the evaporation of successive portions of the urine on slips of glass, both spontaneously and by the aid of a gentle heat But the results obtained in this way were unsatisfactory from the difficulty with which this variety of sugar crystallizes, and the following process was substituted The urine was evaporated over a salt water bath, to the consistence of a thick syrup, and drops of this, spread very thinly on slips of glass, were left to spontaneous evaporation In the course of a few days the liquid disappeared, leaving on the glass little hemispherical grains of a white color (none of them as large as the head of a pin), either isolated or collected into mammillated crusts With the urine of the male patient, Pettigrew, two or three days were sufficient for this purpose, that of the female patient, Gould, which appeared to contain less sugar in proportion to the other constituents, required more than a week's exposure

The objects thus procured were prepared for the microscope by covering them with Canada balsam Being now examined with moderate powers, each little grain resolved itself into a compact group of fibers radiating from a central point, many of their ends projected beyond the mass, but exhibited no distinct crystalline faces This radiated structure, with a fine silky lustre, becomes distinctly visible to the naked eye in the larger grains, when they are covered with the balsam The aid of the polarizing attachment to the microscope was now called in to decide the question as to the crystalline structure of the grains, when the rich and varied colors exhibited in the polarized light left no doubt of their really being groups of radiating acicular crystals Among these masses of sugar there were noticed a few groups of more distinct crystal, not arranged like them in a stellate manner, and presenting entirely different appearances in polarized light. These are doubtless some of the saline constituents of the urine As diabetic sugar is classed with that variety, to which from its abundance in the juice of ripe grapes the name of grape sugar is given, it became of interest to compare the appearance of the two under the microscope Grape sugar is present in large quantity in honey, and is the variety formed from starch or from cane sugar by long continued boiling with dilute sulphuric acid This variety is entirely distinct in its character from the common or cane sugar A portion was prepared from honey and dissolved in alcohol, the solution, evaporated to a syrup and prepared for the microscope in the same manner as the diabetic urine, crystallized in groups of radiating fibers like the diabetic sugar, and presented similar appearances under the microscope, both with and without the polarizing attachment. An alcoholic solution of the diabetic sugar was also prepared, which crystallized in the same manner, a similar solution of cane sugar afforded no radiated groups, but distinct prismatic crystals which gave fine colored rings in polarized light. Under the microscope the urine of both patients (before evaporation) is seen to contain great numbers of colorless globules, often connected in chains or groups of half a dozen or more I made a cursory examination for urea, by evaporating an ounce of the urine from each patient to one quarter and adding an equal volume of nitric acid Pearly crystalline plates of nitrate of urea soon made their appearance in both, showing urea to be present in considerable amount, but the quantity of urine operated upon was too small to allow of a correct determination of the amount

Yours respectfully, John Bacon, Jr

Although Moore's test had been made known in 1844, the first mention of its use in the hospital was in 1851, when the following record appears "glucose strongly marked on the addition of heat and liquor potassæ"

In 1852 Dr Bacon determined, by what means it is not stated, that the per cent of sugar in a given urine was 4 per cent and two years later the fermentation method was employed for ascertaining the percentage

The breath of diabetic patients first attracted attention in 1835, when a man entered the hospital with a note from his physician stating that it had a "peculiar sour smell" The observation made of this patient while in the hospital was of "a curious smell in breath which he has had since entrance" In three cases the breath is stated to have the odor of new milk In 1846 it is noted of one of these "odor of breath considered by some of aromatic sweetness" Other expressions are in 1846 "odor of boiled milk," in 1848 "ward distinctly tainted with smell peculiar to diabetes," "fruity odor," in 1869 "sweet chloroform-like smell in neighborhood of patient's bed"

That the acetone odor of the breath then was attracting general attention is apparent in 1847 from the statement made in Watson's Practice (op cit p 868) that "according to Dr Prout the scent somewhat resembles that of sweet hay, but to my nose it is more like the smell of certain apples or rather of an apple chamber" He attributes the peculiar odor to the sugar In 1866 in Harley on Diabetes (op cit) there is no mention of acetone or of diacetic acid, although Petters (*Prager Vierteljahrsch* 1857, lv) several years before had attributed the coma of diabetes to the former agent

Acetone was sought for in the breath of 19 cases, and in the urine of 24 cases Its presence was indicated by the odor in 16 of the former, and by chemical tests in 14 of the latter series It is interesting to note in connection with the result of recent investigations on the increase of acetone in consequence of a change to an absolute proteid diet, that the records state in 1894 that the "acetone smell has been more since disappearance of sugar than at any other time" Ten days later, however, without any change in diet there had been no return of sugar and no smell to the breath

The ferric chlorid reaction, which, when positive, is considered generally to be evidence of the presence of diacetic acid, was sought for in 22 cases and found in 13 Albuminuria was present in the urine in 67 cases and was absent in 60 cases Casts were found in 36 cases

In four instances only is there a record of the examination of the feces In 1844 a patient reported that his "food frequently passes away in lumps undigested" and fat is reported as absent in the stools of three patients

In six cases there was tinnitus aurium and two patients had sciatica Sexual power is noted as absent in 9 cases and present in 4 The catamenia were present in 11 cases and absent in 9 Jaundice is mentioned to have occurred in five cases, and three of these patients died in the hospital, one of pneumonia and one of atrophied pancreas Syphilis is stated to have existed in one case Diabetes and myxedema coexisted in one patient and in another diabetic there was a tumor of the thyroid body Three of the patients suffered from gangrene of the toe, a fourth had a gangrenous slough of the tissues of the leg, and a fifth died with a carbuncular-like inflammation of the thigh Three of the patients had abscesses, one being of the hip, another of the wrist, both cases ending fatally The third abscess was of the jaw, but the patient grew better In one case there was a round ulcer of the toe, which improved under treatment

The records afford some evidence concerning the duration of the disease, which in one case is stated to have existed for twelve years, while three patients had suffered but two weeks Of the latter, one died, one was relieved and one unrelieved The average duration was one year and a half

The length of the illness in the fatal cases is indicated in the following table

DURATION	NUMBER OF CASES
From 0 to 1 year	27
From 1 to 2 years	7
From 2 to 3 years	3
From 3 to 4 years	1
From 4 to 5 years	0
From 5 to 6 years	1
From 6 to 7 years	1
Unknown	7
	47

These cases, necessarily those of grave diabetes, thus ended fatally in nearly three-fourths of the number in which this point could be determined within one year after the disease made itself manifest, and within two years in nearly seven-eighths of the entire series That diabetes may prove fatal at the end of a longer period of time, from 6 to 7 years as in one instance, is attributable to the well known fact that cases of mild diabetes may become suddenly severe, and that the symptoms of this disease may for a while disappear to return at a later period An illustration of the latter condition, one which may be called recurrent diabetes, is to be found in the record of a patient who was in the hospital in 1862 In March, 1861, he suffered from cough with abundant yellow expectoration In the latter part of the month the thirst increased and became excessive, the patient drank freely and passed large quantities of pale urine The appetite failed and there was progressive debility At the end of four months the quantity of urine became normal The patient remained apparently well until the following February, when excessive thirst, polyuria and debility returned, and it was observed that the urine left a sticky and sparkling deposit on cloth Another instance of recurrence is noted in 1866 Two years previous to the entrance of this patient he observed that an abnormally large quantity of urine was being passed in the twenty-four hours and that the thirst was excessive These and other symptoms continued for three months and then disappeared without treatment At the end of eighteen months, however, they returned, accompanied by general weakness and faintness It is recorded that the house physician tasted the urine of this patient

Of the 172 patients 47 or 27 per cent died The mortality among the 127 male patients was 39 or 30 7 per cent, of the 45 female patients 8 died, a mortality of 17 7 per cent The death rate among the males thus proved nearly twice as high as among the females The following table illustrates the variation in the rate of mortality during successive periods of years

Period	No of cases	No of deaths	Percentage of deaths
From 1824 to 1840	7	1	14
From 1840 to 1855	16	7	44
From 1855 to 1870	24	5	20
From 1870 to 1885	39	11	28
From 1885 to 1898	86	28	27
From 1824 to 1898	172	47	27

It has previously been remarked that from 1824 to 1885 there were treated 86 cases, the same number of cases as in the period from 1885 to 1898 It is certainly noteworthy that in each of these intervals there was an average of 27 per cent of fatal cases, which again was the average mortality rate of the cases treated throughout the entire period from 1824 to to 1898 It might be thought, from the inspection of this table that the method of treatment was superior from 1824 to 1840 and from 1855 to 1870 and that in the intervening years it was inferior The information on this point later given affords no justification for such an inference

Although it appears from the study of the records that most cases of grave diabetes die within a year or two of the onset of the disease and that 27 per cent of all cases are fatal, some evidence has been obtained with regard to the prognosis in the individual case Heredity appears to have less importance than is usually assigned to it Of ten cases in which heredity may have been of etiologic significance three died, while of thirty-two cases in which heredity had no influence eight died Thus the percentage of deaths was merely a trifle higher in those cases in which an inherited tendency to diabetes may have played a part than in those in which no such influence existed

The time of life at which the patient suffers from the disease appears to be of greater prognostic importance, as may be inferred from the following table

Age	No of Cases	Deaths	Per cent
From 0 to 10 years	3	1	33
From 10 to 20 years	15	3	20
From 20 to 30 years	41	14	34
From 30 to 40 years	43	13	30
From 40 to 50 years	29	4	14
From 59 to 60 years	28	5	18
From 60 to 70 years	11	5	45
	170	45	

Thus about one-third of the patients suffering from diabetes during the first ten years of life and between the ages of 20 and 40 years die, and nearly one-half of the cases between 60 and 70 years prove fatal The number of cases of diabetes in young children, however, is so small as not to be of much value in generalizing The high rate of mortality after the age of 60 is due, possibly, only indirectly to the diabetes, the patients perhaps being unable to resist the effects of other disease, even if mild, in the presence of so grave an affection

Thirty-eight of the 47 fatal cases died comatose, the coma lasting one day in 10 cases, two days in 14 and three days in 5 patients In the remaining 9 cases the duration of the coma was not to be determined The frequency of the coma in re[illegible] to t[illegible]ge of the patient is indicated in the f[illegible]

Age	No of cases	Deaths from coma.	Per cent
From 0 to 10 years	3	1	33
From 10 to 20 years	15	3	20
From 20 to 30 years	41	12	29
From 30 to 40 years	43	9	21
From 40 to 50 years	29	3	10
From 50 to 60 years	28	4	14
From 60 to 70 years	11	3	27

The suddenness of its onset in certain instances is apparent from the record of a patient in 1828 who was able to leave the hospital for a few hours, at the end of which he became comatose and died In 1846 another patient absented himself from the hospital without leave and became intoxicated, two days later he was comatose and died at the end of another two days On the other hand, a third patient while in the hospital became intoxicated, had no coma and lived

It is to be observed that of twenty fatal cases of diabetes there was present chronic nephritis in six, pulmonary tuberculosis and carbuncle or gangrene each in three, myocarditis in two and pneumonia, pleurisy, cerebral thrombosis, alveolar abscess and atrophied pancreas each in one A patient with diabetes suffered at the same time from acute catarrhal cholangitis, acute rheumatism and chronic bronchitis

The study of the records of these cases affords some evidence relating to the prognostic value of the presence of acetone and diacetic acid Although the odor of acetone was present in the breath of 12 out of 14 fatal cases, that is, in more than 85 per cent, and in the urine of 6 out of 9 fatal cases, namely 66 per cent, in which the records show that attention was directed to this point, it was present also in the breath of 4 out of 5 non-fatal cases, 80 per cent, and in the urine of 8 out of 15 non-fatal cases, 53 per cent It is evident from this comparison that the presence of an acetone odor in the breath or in the urine throws but little light upon the severity or mildness of the disease

The ferric chlorid reaction was present in 6 out of 8 fatal cases and in one-half of the 14 non-fatal cases in which it was sought for This evidence, so far as it goes, therefore, is in support of the view that this reaction has a somewhat serious significance

It is interesting to note that in the earliest days of the hospital the improvement of the patient's condition was based upon an increase in weight

It is to be remembered that John Rollo (Notes of a Diabetic Case, 1897) first ascertained that an animal diet not only decreased the quantity of urine, but also diminished the amount of sugar The diet, therefore, from 1824 to 1840 was based evidently upon this discovery and the first diabetic patient in the hospital was fed on "animal food and bread in small quantities Only one potato (*sic*) at dinner" Later molasses, beer and apples were excluded from his diet In 1827 a patient's fare consisted of two eggs, at a meal, meat, milk, butter and salt Such a diet, however, was not exclusive, for mention is made that vegetable food and sugar were not to be taken, but rice and milk porridge were allowed Toast water and broth were permitted, and crackers were given instead of bread Thirst was quenched with chamomile tea or balm tea, and lemons also served for this purpose

The unlimited use of liquids was not permitted, for one patient was allowed only a "teacup of liquid at meals" Another was given, "balm tea as little as will suffice," and it is stated of a third that he "thinks he has not drank all his allowance"

The first treatment the first patient received was a warm bath, and as the quantity of urine appeared to be less after the bath had been taken it was ordered to be repeated every other day Warm salt baths also were used

The advantages of exercise were appreciated at an early period, for one patient in 1831 was advised to ride horseback, and another was recommended to take as much exercise as his strength would permit

Alcohol was given as early as 1828, when the physician in charge ordered, "let her take some brandy and water, taking one teaspoonful of brandy in hot or cold water, repeating it once in 3 or 4 hours if the effects are grateful" There is nothing in the record to show that its action was displeasing to the patient The recent investigations of von Noorden ("Die Zuckerkranheit und Ihre Behandlung," 1895, 146), show that this treatment has a sound scientific basis since one gram of alcohol is the equivalent of seven calories, while the same quantity of proteids and carbohydrates is equivalent only to four calories

This patient was treated also with opium and "by error took following in A M

℞ Infus Sennæ Comp, ℥iij"

On the next day he "was uncomfortable in head with some depression of spirits" During this patient's stay in the hospital he was ordered powdered rhubarb and the infusion of rhubarb and magnesia, a trial was made also of uva ursi and of the sodium and potassium tartrate

During the first fifteen years the treatment in general consisted of opium, either alone or with camphor and aloes Cathartics, were used liberally, and frequent mention is made of rhubarb, aloes, colocynth, senna, calomel, magnesium sulphate, castor oil and croton oil Enemata were employed freely, some of them being especially designated "active" One patient who complained of nausea promptly received a dose of ipecac

Among other drugs in use during this period were quinin and dilute nitric acid, the decoction of sumac and powdered guiac

Blisters and cupping often were used, and one patient "thinks opium and blisters have been followed by the greatest improvement" More severe counter-irritation was ordered sometimes, as appears from the record, "apply caustic issue on each side of the spine" In one case this application proved to be directly injurious

During the period of high mortality, that is from 1840 to 1855, the following dietary is ordered "Lean meat, with a small quantity of stale, dry or toasted bread, avoiding all fatty, farinaceous and saccharine articles For drink, cold water and weak tea" The use of liquids continued to be restricted, although slippery elm tea now came into use Alcohol was not given regularly, and blisters no longer were applied Leeches appeared to serve in the place of the latter and of issues for it is recorded, "Leach (*sic*) bites now ulcerated"

Opium continued to be given, but not so largely as previous to 1840 Cathartics were prescribed with freedom, and the liberal use of calomel is suggested by the frequent records of spongy gums and myrrh mouth washes Iron now was used in the form of the tincture of the chlorid or the carbonate Other remedies employed were argentic nitrate, ammonium hydrosulphuret, ammonium carbonate, conium, hyoscyamus and valerian, aromatic sulphuric acid and creosote During this period the use of yeast was tried by McGregor (Watson's Practice, p 872), who stated that it made the patients feel as if they were "on the eve of being blown up" A patient in the hospital was ordered to "take yeast ℥ss in milk *ter die*" This quantity was increased to an ounce daily and then was resumed and omitted at intervals during a month, the yeast being taken five sixths of the time The effect was not that mentioned by Watson, but a sense of constant nausea was the chief resulting complaint

From 1855 to 1870 especial attention was paid to the selection of a suitable bread, and bran bread, stale bread, brown dyspepsia bread, toasted dyspepsia bread, ship biscuit and toasted ship bread were ordered Butter, cabbage, cheese and greens were allowed, but shellfish and liver were excluded Liquids at times were restricted, and cocoa was given somewhat frequently Alcohol was ordered occasionally, and one patient, notwithstanding milk punch was prescribed *p r n*, remained in the hospital but a single day, at the end of which he was discharged unrelieved Opium was but little used, counter irritants were discontinued and there was but little variety in the use of drugs One patient received a half pint of iron rust water at dinner To another in 1866 was given a half ounce of cod liver oil three times daily As "she likes it and don't have enough," the dose was increased to three ounces three times daily This maximum dose was reduced in consequence of the production of loose movements of the bowels

From 1870 to 1885 gluten bread was used, but was discovered to contain 33 per cent of starch Patients were advised "to drink as little water as possible," but as much as four quarts of skim-milk were given daily Opium and codeia were used frequently, but alcohol, blisters, baths and exercise were not advised as a part of the routine treatment On the contrary, a large number of drugs were employed, including Fowler's solution, bromid of arsenic, antimony, bismuth, phosphate of zinc, phosphorus, bromid of potassium, iodid of potassium, sulphid of calcium, salicylate of sodium, hydrochloric acid, lactic acid, gallic acid, pilocarpin, chloral, ergot, pepsin, Wilbur's oil and Shaw's pill One patient received what was called the glycerin treatment, instituted by Schultzen (Naunyn, "Der Diabetes Mellitus," 1898, 405) On the day after his admission he was given thirty-three ounces of glycerin and died comatose on the same day The coma was accompanied by spasms, to relieve which ether was given, but the house physician apparently feared that the death might be attributed to the effects of the ether

In the period since 1885, Soya bean bread has been added to the dietary, and fats are used with freedom The use of water is frequently, by no means always, restricted, and the use of skim milk gradually has lessened Alcohol, baths and exercise, are not made matters of routine Opium and codeia are more often used than before, and trials have been made with potassium citrate, lithium carbonate, jambul, salol, salicin, antipyrin and urethan Saccharin occasionally is used Up to this period comatose patients had been treated solely with stimulants and diuretics, and brandy, nitroglycerin and oxygen were given frequently at the onset of coma The use of solutions of sodium chlorid or sodium bicarbonate in enema, subcutaneous injection or by transfusion was begun and eight patients were thus treated Although these patients died, as had those otherwise treated, it appears from the records that in certain instances life was somewhat prolonged The patient's mind usually became clearer after the administration of the saline, and one person was aroused to such a degree that he is recorded to have said, "Oh! doctor, I'm glad you did that, I have not felt so well for a long time"

The practical outcome of this examination of the records of cases of diabetes treated at the Massachusetts General Hospital during the past seventy-four years can be stated in a very few words The average mortality of saccharin diabetes has not changed materially, for it was the same in the past thirteen years as in the previous sixty-one years The dietetic restrictions have undergone no essential alteration in this time Opium is the only drug which has been persistently used in the treatment throughout this entire period

DISCUSSION

Dr West—I have been much interested in the résumé of the large number of cases referred to by the reader of the paper There were several points that struck me during the reading of the paper which I do not wish to discuss so much as to make inquiry about First in regard to race I notice the doctor said that no cases occurred among the negro race (Dr Joslin one case reported) The small proportion might be due to the small proportion of negroes in that country So far as my observation goes, living as I do in a country where there is a large proportion of these people, I never saw a case of diabetes in the negro race

I would like to inquire too about the statistics in regard to the occurrence of diabetes among the Hebrew race

The cases of diabetes that I have had in my practice have occurred in persons who were fleshy

In regard to diabetes occurring as a complication of gout I have found in my experience gout and diabetes frequently associated

Another point that I would like to inquire about is the rapidity of the fatal results in the cases of the young Diabetes pursues a rapid course in the young persons, more than in the older I noticed that albuminuria was found in about 60 per cent of cases and yet the autopsy failed to show any kidney lesion That seems to me remarkable I should like to inquire also in what proportion of the cases was diabetes of cerebral origin

Dr Tyson—There is only one point I can treat which relates to the question of diabetes occurring in negroes About three years ago I gave a clinical lecture and I made the statement that I had never seen a case of diabetes in a negro There happened to be present a negro physician who had a large practice among negroes and in the course of a few days I had three negroes referred to me with this trouble I think, therefore, it is not unlikely that diabetes is more common in the negro race than it is supposed to be My experience at that particular time satisfied me as to that fact I have been interested in diabetes occurring in young children Many cases occur in young children, but I can not find an explanation why Diabetes is much more common among the Hebrew race than among Christians It is also a much more common disease in males than in women

Dr Bond—I would suggest that the Hebrew race probably have this disease more than any other people on account of their love of high living It is a well known fact that they eat largely of such foods that are irritating more than any other class of people They are given to parties, they congregate together and have frequent and irregular meals I believe it is from that fact that they have this disease more than any other people

Dr Stockton *of Buffalo*—I rise to call attention to the historic value of the paper I think this paper is a very useful illustration of the principle expounded this morning in the general address in medicine by Dr Musser

Dr Joslin—In reading my paper much was necessarily omitted on account of lack of time The printed article contain answers to the prec

THE USE OF IRON AND OPIUM IN BRIGHT'S DISEASE

Presented to the Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association, held at Denver, Colo June 7-10 1898

BY JAMES TYSON, M D
PHILADELPHIA PA

For some time I have been rather anxious for an opportunity to relieve myself on the subject of the administration of iron in the treatment of Bright's disease, the more especially as I feel somewhat responsible for the present, as I regard it vicious practice of indiscriminate prescription of this drug in the disease referred to for I am one of those who in times past have taught that iron is a remedy indicated in almost every case of Bright's disease Thus on page 138 of my book on Bright's Disease published 17 years ago, I say, "It may be laid down as a rule to which there are few exceptions, that the *continuous* use of some one of the preparations of iron is indicated," the word continuous being underscored in the original Again on page 186, in speaking of the treatment of chronic interstitial nephritis, I say of drugs, "Iron is perhaps the most important and indispensable and may be given in the shape of the acetate or the well known Basham's mixture" I have learned since writing the above that there is a good deal of mischief done by iron in Bright's disease, and I am not sure that it would not have been better for many patients if the gallons of Basham's mixture which have been prescribed since Dickinson first suggested it over 25 years ago, had been poured into the street gutter rather than into the stomachs of the patients it was intended to benefit It is an interesting fact confirming the statement already made that scarcely a patient ever comes to me in consultation or is sent from another physician who has not been taking Basham's mixture, and it is further confirmation that in a very large number of these cases it is given under the impression that it has some specific effect toward curing Bright's disease It is needless to say that it was never suggested for any directly curative purpose, but simply as a remedy for the anemia which is so conspicuous a symptom in many cases and for this purpose it still is and always will be useful

But not every case of Bright's disease is anemic, and as iron has no specific curative effect it is clearly not indicated in non-anemic cases Nay more, it is often harmful It is harmful by locking up secretion and checking elimination already restricted by the diminished functional activity of the kidney The direct results of this are seen in headache and head-throbbing, associated with constipation and coated tongue to which the patients themselves often call attention and which appear much earlier in these cases than in persons who have integral kidneys In such cases Basham's mixture or iron in any form may even precipitate uremic symptoms

While anemia as determined by the appearance of the patient and more accurately by a blood count and hemoglobin measurement is the only indication for the use of iron, it is possible also to indicate in a general way the class of cases in which iron may or may *not* be useful Thus it may be laid down as a rule to which there is almost no exception that iron is not indicated, and should not be prescribed in cases of acute Bright's disease Iron is at best a remedy of slow operation so far as good effect is concerned, while it is rapid in producing its harmful influence whatever that may be In acute Bright's disease there is not generally anemia and where there is, it is of secondary importance to more urgent symptoms It is trespassing on nature therefore and embarrassing other more urgent treatment to give iron in acute nephritis On the other hand, after the acute symptoms have passed away and convalescence sets in iron is often very useful

A second class of cases in which iron is contraindicated and is more frequently harmful, is chronic interstitial nephritis The association in this condition of more general total destruction of tubular epithelium with restricted elimination goes to show that it is not unlikely that in parenchymatous nephritis acute and chronic the renal cells are capable of a certain degree of function even though they be cloudy and swollen At any rate it is in chronic interstitial nephritis that iron is more promptly and dangerously harmful than in any other form of Bright's disease It does happen that in advanced stages of this affection there is sometimes extreme anemia and it would seem that under these circumstances it might be used And under such circumstances if at all it may But even in this, representing as it does, the last stages of the disease, in which a dilated heart is staggering under a load it can barely carry and in which a last straw may either cause it to stop beating or furnish the spark to ignite a fatal uremia the drug is of questionable value

The form of Bright's disease in which iron is best borne is chronic parenchymatous nephritis And as this is apt to be associated with more or less anemia it becomes a most valuable remedy in overcoming this symptom Even here the doses given are usually needlessly large I hold that wherever iron appears in the stools for whatever cause administered this unabsorbed portion is useless, and as it is this which acting as an astringent causes constipation it is not only wasted but harmful My practice is to determine the proper dose by an examination of the stools and if these are decidedly blackened, I hold that I am giving too much On the other hand a slight coloration may be permitted as indicating that a sufficient dose has been attained

A further explanation of the general use of Basham's mixture is the very common impression that this preparation of iron is diuretic I am inclined to believe that this is an error, or at any rate it is no more diuretic than the bulk of water which constitutes its menstruum That some diuretic action may be expected from this source is rendered reasonable by the fact that Basham's mixture and in fact any preparation of iron is commonly freely diluted The ingestion and absorption of so large a bulk of water may be reasonably expected, by the increased intra-vascular pressure which it excites, to produce increased secretion of urine

As to the second of the drugs mentioned in the title of my paper, I believe the dangers of its use are more generally appreciated, and yet I am confident that many a life is sacrificed by the injudicious use of opium I believe therefore, that a word of warning can not be out of place That we should endeavor to understand the conditions contraindicating the use of opium in Bright's disease is the more important, because there are certain states in which opium has been held to be of signal advantage, namely, in the treatment of uremic convulsions I regard the evidence in favor of the efficiency of hypodermic injections of morphin in certain cases of uremic convulsions as altogether too conclusive to admit of denial, yet I am certain that death has not infrequently been precipitated by it, and when I tell you I have seen a fatal uremia induced by a couple of teaspoonsful of paregoric, I trust I convey to you an adequate idea of the dangers of this drug

First, perhaps, it is desirable to know the conditions in which opium is positively contraindicated First and foremost is chronic interstitial nephritis I regard the use of morphin in this form of Bright's disease as harmful in the extreme, and the hypodermic injection of morphin in such cases should be positively forbidden It is this form of disease in which I have known so many cases launched upon a last sleep whence they have never awakened I do not think it possible to be too emphatic on this subject, and I desire to raise my voice against it in the strongest terms The beginning of the evil result is a diminution and finally a suppression of urine, followed by coma and death It is especially in old persons in whom chronic interstitial nephritis is unsuspected in which this accident occurs Hence too, the importance of examining the urine of old persons before administering opium

After chronic interstitial nephritis come cases of so-called surgical kidney or suppurating kidney due to stone in the bladder, tuberculosis of the kidney and the like The danger in these cases depends a good deal on the degree of kidney substance destroyed It is well known that operation alone in some of these cases becomes the exciting cause of graver changes which terminate in uremia, as seen in the well-known case of the Emperor Napoleon III, while I am confident the use of opium has precipitated many more Fortunatety, the modern practice of surgeons in repudiating almost entirely the use of opium after operations, has served to diminish largely the number of accidents from this cause, while another saving clause exists in the fact that while the kidney is often extensively destroyed, in many cases there remain considerable areas in which the kidney substance is sound This is in marked contrast to the state of affairs in chronic interstitial nephritis, where the invasion is uniform

Finally, the more extensive the destruction of the kidney, whatever the form of the disease, the greater the danger from the use of opium Therefore, chronicity becomes in a general way a measure of the danger risked I say, in a measure, because the progress in different cases varies so much that duration is not always a measure of the destruction of the kidney On this account, chronicity has its limitations as a sign of danger when we have not chronic interstitial nephritis On the other hand, it becomes more important to insist on great caution in the use of opium in every case of renal disease In chronic cases of the more doubtful kind, the way may be felt by means of very small doses gradually increased, where opium is indicated for any cause

A corollary following from the last rule brings us to those cases in which the use of opium is least harmful and in many conditions most happy in its influences These are cases of acute nephritis and of puerperal nephritis, and the condition in which it is often useful is the uremic convulsion in such cases The use of opium in the treatment of uremic convulsions in acute Bright's disease is intimately associated with the name of Alfred Loomis, and his original position has been much misrepresented It was only in acute Bright's disease, as Dr Loomis himself has told me, that he recommended hypodermic injections of morphin, while others claiming to follow him have advised it for convulsions in all stages I believe Dr Loomis' original position is justified and that we may still use with signal advantage this mode of treatment The only risk lies in cases in which the diagnosis is doubtful, and the treatment should not be applied without careful investigation—indeed, dispensed with except in cases of absolute certainty

The treatment of puerperal convulsions by the hypodermic injection of morphin is justified on the ground that most of these patients represent cases of acute nephritis But here even more than in the cases just described, great caution should be used, for not every case of puerperal convulsions is a case of acute Bright's disease, and now and then it happens that death is precipitated because such a case happens to be a chronic one and falls in the category of those in which the use of opium is dangerous

It will appear from what has been said that diagnosis is the safety gauge by which danger is to be averted First of all, we should be certain that cases of other disease requiring the use of morphin are not complicated with chronic Bright's disease Cases in which I have known accident to happen have been simple diarrhea calling for the use of opium and violently painful conditions, such as angina pectoris In no symptom of Bright's disease itself can opium be of use except in convulsions, and for this symptom only in cases of acute nephritis whether originating from the ordinary causes or pregnancy, and so rarely in chronic parenchymatous nephritis that it may be practically ignored Finally, under no circumstances in chronic interstitial nephritis should opium be used

In conclusion, I beg to be understood that I do not repudiate altogether iron and opium in Bright's disease, but desire to limit them to a rational and safe use

DISCUSSION

Dr H A West of Galveston, Texas—I wish to speak of one point brought out by the writer, that acute Bright's disease is not attended by anemia and therefore that iron is contraindicated in this disease I believe that many cases of acute Bright's disease are attended by anemia and therefore are much benefited by iron, it is absolutely beneficial when anemia exists

Another point I wish to make mention of is in regard to the use of opium in the treatment of certain forms of uremic convulsions My experience has been to find that a hypodermic of morphin is the only means of controlling effectually the convulsions which accompany such diseases as diphtheria Chloroform, hydrate of chloral, bromids, etc, fail to control severe uremic convulsions, especially of the puerperal kind, but they are controlled by heroic doses of morphin and atropin It has been my experience to see many such cases There are cases of uremic convulsions, not of chronic Bright's disease, where lives can be saved by heroic administration of morphin

Dr Stockton of Buffalo—Dr Tyson has brought out many points for discussion In the first place I will express my views as to the use of opium in Bright's disease I am glad he has stated just what he has There are instances in which the hypodermic injection of morphin will save lives when no other remedy is available As to the use of iron I do not altogether agree with him I think with the gentleman that last spoke, that if anemia is present iron is beneficial I do not think that Dr Tyson will deny that statement Anemia occurs rapidly and should be combated Another point relates to the amount of the iron to be given to combat the anemia In my experience, if we depend upon a small amount of iron there is not nearly so much absorbed as there would be if a larger amount was used

Dr Brown of Cincinnati, Ohio—Every particular form of

Bright's disease is one in which there is some danger in using iron and opium

Dr **Van Horn** of Illinois—I am much pleased with the paper In puerperal convulsions, I think if the gentlemen will use the lancet the condition will be relieved quickly and surely and they will have no occasion to use morphin or the bromids

Dr **Tyson**—Some of the speakers have not exactly appreciated the position I take I do not deny that anemia does occur in acute Bright's disease The point I take is that when anemia occurs early in Bright's disease, it is a secondary symptom The more urgent symptoms are those which require treatment. Relief should be first directed to the scanty or suppressed urine and to the dropsy I admit that anemia supervenes rapidly in acute Bright's disease, and here we should use iron, but only after the dangers are gone The question naturally arises in acute Bright's disease where the acute form ends and the other begins

In regard to uremic convulsions, I accept the statement that this is a form of convulsion that a hypodermic of morphin will often benefit. The same is true also of the convulsions occurring in parenchymatous nephritis I admit, too, that after other measures have been used, and there is a necessity of doing something more, then opium may be permitted But I am certain that convulsions have been precipitated by the use of that drug, especially when it is associated with atropin, as both drugs co operate to produce suppression of urine I agree with Dr Van Horn in regard to the use of the lancet.

Chronic interstitial nephritis happens to be the form of disease in which these two drugs are contraindicated, simply because in this form there is restricted elimination, the danger is from further restriction Destruction of the cells is more extensive in this form than in parenchymatous nephritis

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THE COURSE AND MANAGEMENT OF COMPLICATING MYOCARDITIS

Presented to the Section on Practice of Medicine, at the Forty ninth Annual Meeting of the American Medical Association, held at Denver, Colo June 7-10, 1898

BY LOUIS FAUGÈRES BISHOP, A M., M D

NEW YORK

In the course of the practice of medicine, as diseases and conditions are unconsciously classified, ideas gradually develop themselves that are not easy to formulate into the language of exact scientific observation One of these impressions has been that in the debility following severe diseases, there is some more definite underlying condition than is usually formulated The explanation alone of an exhausted and deteriorated nervous system is not sufficient The attention is drawn to the heart muscle, and clinical observation, confirmed by the pathologic observations of others, has led to the belief that complicating myocarditis is an important factor in the course and progress of many conditions The signs of disease of the heart muscle should therefore be studied with care In acute diseases and wasting diseases, whatever may be their nature, there come times when it seems evident that the heart has participated in the debility and degeneration that is visible in the other tissues of the body So we find in the milder cases a condition of simple weakness of contraction, in the more severe, signs more suggestive of myocarditis, namely irregularity in force and rhythm When after an acute disease, or in the course of a chronic affection these signs are noted it becomes important to interpret their meaning and study their indications

Our conception of the condition under consideration is an inflammatory state of the myocardium following acute diseases, occurring in the course of chronic wasting disease, or beginning as an extension of inflammation from an endocarditis, or a pericarditis It is not proposed to consider conditions secondary to diseases of the coronary arteries or excessive hypertrophy Our subject does not demand an extended reference to pathology A form may occasionally originate in an acute interstitial myocarditis, but more frequently it is a parenchymatous degeneration Dr Osler remarks that it is probably the effect of a toxic agent, and that there is no definite relation between it and high temperature

Every one is familiar with the appearance of the heart muscle in a patient dead from an acute prolonged illness It differs in appearance from the heart of a person who has been killed by accident while in good health In the former the muscle is pale and grayish looking, while in the latter it is firm and of healthy color Probably in many diseases there is this low grade of inflammation that is not more than a slight degeneration

It is not easy to be sure that a true myocarditis underlies any particular symptoms, but there are some that are of more importance than others These are relative feebleness of impulse, especially under the stimulus of slight exercise, disturbances of rhythm and undue rapidity, following the resumption of standing position by a person most of the time recumbent Such signs with dyspnea and prostration complete the picture of complicating myocarditis Cardiac murmurs may, or may not, be present

It has seemed to me that arhythmia in patients who had not previously shown this symptom is specially suggestive

Dr Jacobi says in his book on "Therapeutics of Infancy and Childhood," "We are beginning to become more and more aware of the frequency of affections of the heart muscle Myocarditis in a chronic, sub-acute and acute form is of very frequent occurrence In or after every case of typhoid fever, scarlatina, diphtheria or smallpox, we must prepare to be overtaken by some cardiac disease, either interstitial myocarditis or parenchymatous degeneration Rest in bed or on a lounge (the former is better), will act as a preventive It ought to be continued for weeks in almost every case Like paralysis, subsequent upon infectious diseases, which develop after weeks, heart disease may occur from the same cause, partly as a subsequence of actual primary alterations, partly from nervous exhaustion So long as the pulse becomes more rapid on exertion, or on getting out of bed, absolute rest is the best remedy and safeguard In these cases, it is not always possible to distinguish between functional debility and actual disease"

Dr Jacobi again remarks in the course of his book, "Though myocarditis, both acute and chronic, is by no means so frequent in the child as in the adult, it is nevertheless not infrequent It is indeed remarkable to observe how often it is not diagnosed, or how little its occurrence is appreciated"

Myocarditis must always be feared when there are signs of impaired heart action, especially feebleness and irregularity of force and rhythm, that the underlying condition is disease of the heart muscle These cases are too often carelessly diagnosed as general debility, or as instances of disturbed cardiac innervation It is important that the real condition should be recognized because the treatment may otherwise be prejudicial Stimulants directed to the heart itself are certainly philosophically contra-indicated We might whip a lazy horse, or we might improve the behavior of a nervous horse by discipline, but a sick horse should always be rested and fed So in the case of a heart that is feeble and behaving badly on account of myocarditis following a severe disease, muscle stimulants should be avoided

Especially is the care of the heart muscle important in those cases of acute infectious diseases in which a valve lesion has unfortunately been developed by complicating endocarditis In severe endocarditis myocarditis also probably exists, so that there is a double call upon the forces, as the heart must not only regain it's normal power, but also learn to do greater work to make up for the lesion in the valve Particularly is it important for these patients to follow a long and strict regimen, avoiding indiscretions of diet, sudden exertions and dissipation of all kinds

The treatment of degeneration of the heart fiber when that is far advanced is a difficult problem Indeed, when on account of the evidence of well-marked symptoms we can say definitely that such a process is going on, it is often too late to accomplish a great deal The hopeful cases, and those which it is especially desired to call to the attention at this time, are those of complicating myocarditis, met with as an accompaniment of acute diseases, and to urge the care of this condition during the course of the disease, and during convalescence, so that ultimately the heart may regain its true tone Instances of weak heart following acute disease are not wanting in any one's experience

One of the dangers to the person suffering from myocarditis is the possible result of sudden over-exertion, causing an acute dilatation of the heart from which recovery is not easy The proper regulation of the muscular activity of the patient is therefore of the utmost importance Exercise undertaken to improve the general bodily nutrition, and that of the heart muscle in particular, should be light, slow and systematic Next to exercise comes diet Food should be concentrated so that the nourishment is administered in small volume, leading to an easy performance of the functions of the stomach without the tendency to distension, such as may mechanically embarrass the function of the heart and lungs With the principle of small volume of food, much latitude as to variety may be permitted The use of alcohol, without its abuse, in cardiac cases is very difficult Probably a small quantity with meals is not harmful But any excess is always followed by injury The use of tea and coffee is a good deal a matter of experience with particular patients, but the extreme frequency of cardiac symptoms produced in persons with normal hearts by tea, and the fact that both tea and coffee are recognized as cardiac stimulants, should make us take the stand with our patients that these being cardiac drugs should be controlled by their physician The use of tobacco is better discontinued Often enough patients with defective hearts recognize themselves the discomfort, or rather the lack of satisfaction in the use of tobacco and spontaneously abandon it But others have become habituated to its use so that the effects are not obvious, still these can be taught that the effect of tobacco will finally prejudice their future

As the heart can not be treated directly, we must rely much upon the possible auxiliaries to the cardiac propulsive effort It is unlikely that the heart alone, even in health, would be able under every circumstance to carry on the circulation To imitate in inanimate material, a system of tubes and valves, such as the circulatory system of the human body, would be impossible, but if such a structure were possible it would not operate The slightest defect would cause serious interruption of the current In the circulation in the animal body there is provision made for enlargement of vessels here and contraction there so that the size of the tubes are always as required for the blood current A demand for a larger amount of blood determines an enlarged blood vessel Of course the heart supplies the main impulse to the blood, but the resiliency of the blood vessels, and their contraction and expansion under many varying conditions, must be important factors in the circulation Taking advantage of this in cases of insufficient systole, much can be done to assist the circulation This is notably accomplished by judicious exercise, stimulating baths and massage Nor is the benefit of pleasant diversion in improving the nervous tone to be neglected

Thus we see that in the course of many acute infectious diseases the heart muscle becomes affected by changes of an inflammatory or degenerative nature Usually this is a part of a general condition affecting all the muscles of the body But the heart muscle is of so much more importance, and the course and progress of the myocarditis bears such a vital relation to the well being of the patient it names the condition The picture presented by the convalescent from an acute disease, who has escaped with a healthy heart, is very different from the one who has suffered from degeneration of the heart muscle The former regains health and strength rapidly, the pulse becomes strong, the color returns, and the patient is soon in good health again The patient with complicating myocarditis lingers along in a condition of semi-invalidism The disease from which he originally suffered has entirely disappeared There is apparently no reason that he should not recover strength and health, but the heart for a long time remains weak, unless its state be recognized and particular measures be employed to restore its integrity This chronic complicating myocarditis explains symptoms so often witnessed after diphtheria, grippe, scarlet fever, and other diseases characterized by a violent infection

30 West Thirty sixth Street

THE CAUSES OF THE INCONSTANCY OF MITRAL REGURGITANT MURMURS

Presented to the Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association held at Denver, Colo , June 7 10, 1898

BY J N HALL, M.D
DENVER

Inconstancy is much more frequently a characteristic of regurgitant murmurs at the auriculo ventricular orifices of the heart than of any other cardiac murmurs We propose to study the reasons for this inconstancy, particularly as affecting the mitral valve, although much that we say applies equally well to the tricuspid We shall first look briefly into the character and mode of production of the other murmurs At the arterial orifices we may have direct murmurs from anemia, or infinitely less often, from obstruction in some form, and regurgitant ones from *a*, damage to the leaflets of the valves, or *b*, stretching of the ring supporting them All of these are practically constant excepting the direct ones of anemic origin, which disappear under the use of iron in many cases

Presystolic *murmurs* originate from narrowing of the auriculo-ventricular [illegible] d [illegible] actically, constant, excepting that [illegible] auricu [illegible] wall may lower the fo [illegible] to an extent as to render the vibrations inaudible. This phenomenon probably occurs in most cases of this nature after interruption of compensation. Leaving out of consideration the anemic murmurs, the murmurs we have just considered depend commonly upon conditions of the valve segments or the orifices brought about by endocarditis or atheromatous processes, and not subject to rapid changes either from medication or changes in blood pressure. As regards regurgitant murmurs at the auriculo-ventricular orifices the matter stands very differently, chiefly owing to the different mechanical conditions entering into the problem. Mitral systolic murmurs are frequently hemic in character, and these are subject to frequent variation from changes in the condition of the blood, as are hemic murmurs elsewhere. It is especially common to see them disappear under the use of iron. I believe that very soft, slightly musical systolic murmurs at the apex in children are most frequently hemic in nature. We should note that it is probable that certain apical murmurs in severe anemia are really regurgitant in nature, and yet disappear under treatment, for the weakness of the myocardium from insufficient nourishment in such cases may give rise to temporary insufficiency, the weakened papillary muscle failing to draw the valve segments accurately together. We should mention here those murmurs heard in certain phases of respiration only, and yet synchronous with the apex-beat, only to dismiss them, since they do not come properly within the scope of this paper, not originating within the heart.

The fact that the heart is hinged upon the great vessels at its base, and therefore may be more easily displaced from the chest wall at its apical portion than at its basic by changes in posture, intervention of the lung, effusions or tumors, constitutes a further reason for the inconstancy of certain mitral murmurs because the source of the abnormal sound is easily pushed back from the chest wall by the causes mentioned. Although the vibrations still exist, they may not reach the chest wall under these circumstances.

The transmissibility of a murmur is so obviously dependent upon the force of the blood current that a change in its area of transmission is to be expected with change in power of the heart muscle. Cammann formerly stated that the existence of mitral leakage was established only by hearing the systolic murmurs transmitted to the back. This is obviously incorrect, for cases are common in which, during established compensation, the murmur is to be heard in the back, while it disappears with failure of this process, even to reappear after a temporary restoration of heart-power. Although the disappearance of the murmur from lessening of the force of the blood current is perhaps more strikingly seen in connection with mitral stenosis than with mitral leakage, the basic murmurs are less liable to such change than either of these. An apical systolic murmur occasionally replaces suddenly the presystolic murmurs of stenosis, owing to rupture of the stenotic valve. We need only mention this rare phenomenon.

Above all the causes thus far mentioned, however, is the peculiar structure of the auriculo-ventricular orifices, to which we must look for the explanation of the inconstancy of many systolic murmurs. The relatively large size of the ring, its comparatively easy dilatability, the presence of papillary muscles assisting in the closure of the orifice, and above all the attachment of these papillary muscles to the easily dilatable ventricular walls, offer abundant opportunities for leakage at the orifice and the consequent development of abnormal sounds. We should not, therefore, be surprised at the comparative frequency of occurrence of the murmurs in question. Although the valve segments be perfect, we may readily see that leakage may occur, *a*, from dilatation of the ring to such an extent that the valves can no longer cover the opening, *b*, from stretching of the papillary muscles or loss of their contractile power, as from degeneration of their muscular tissue, so that the valve-segments are pushed too far into the auricle to meet accurately, *c*, from contraction of these muscles and of their chordæ tendineæ from endocarditic changes, so that the valves are unable to meet together, *d*, from a retraction into the ventricle of the leaflets of the valve from dilatation of the cavity, this serving to increase the distance between the point of origin of the muscle and the normal meeting place of the leaflets of the valve. Thus, although ring, leaflets and papillary muscles be normal, leakage occurs.

As all the conditions herein specified are subject to change, in some cases, as for example the last one quoted, to very rapid change, we need not be surprised at the great variations to be found in the physical signs in such cases. Drugs have vastly more influence in producing such changes than, for instance, at the aortic orifice where the mechanical problem of closing the opening is much simpler. Thus an improvement in the tonicity and contractile power of the myocardium from the administration of digitalis may cause a leakage to disappear, as I have repeatedly observed, by its effect in abolishing the dilatation of the left ventricle, thus bringing the walls of the cavity, where are attached the papillary muscles, near enough to the normal position to permit of efficient closure of the valve segments.

Roy and Adami believe that strophanthus acts particularly upon the papillary muscle. In leakage due to fault of this structure, an increase in the contractile power from the drug mentioned may possibly cause the murmur to disappear. The yielding of the ring is greater under conditions of increased blood pressure, but a murmur present from this cause alone is likely to be fairly constant because of the lack of elasticity in the structures composing the ring, and to consequent inability to regain its previous condition.

We know that the advance of a stenotic process at the mitral orifice lessens the gravity of a concomitant regurgitation by diminishing the size of the orifice. It is probably possible that a regurgitant murmur may disappear for a time by such a process. The most constant murmurs are probably those originating from insufficiency due to endocarditic defect in the leaflets, or to shortening of the chordæ tendineæ by the same process. Such murmurs are probably constant excepting as they fail from great lowering of the blood tension, although they may fail of transmission to the surface because of the intervention of effusions, or otherwise.

Chloroform Treatment of Yellow Fever.—The National Academy of Medicine at Rio Janeiro is much interested in a new treatment for yellow fever proposed by Dr. Erico Coelho, which he has used with great success in his private and hospital practice. It consists merely in the inhalation of chloroform for hours during the early stages of the disease.—*O Brazil Médico*, May 8.

TUBERCULOSIS AND ITS TREATMENT BY THE LATER METHODS

SUBJECT ILLUSTRATED BY TWELVE CLINICAL CASES

Presented to the Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association, held at Denver, Colo , June 7 10, 1898

BY A G DEARDOFF, M D
SAN FRANCISCO, CAL

I wish to add my experience in the use of one of the later remedies in arresting, and in the earlier stages, of curing tuberculosis There are many new remedies used in tubercular troubles which prolong life and frequently cure that only a few years ago were unknown in the treatment of this dread disease which, as all medical men know, causes more death and distress in the human family than any other one trouble I condemn none of these new remedies, but to the best of my ability, have investigated several, and the one that appeals to my better judgment is Dr Paul Paquin's Anti-tubercular Serum and Anti-streptococcus Serum The use of this serum in my own practice has convinced me that it is good Revolutions come in medicine as in other things A remedy will have a wide notoriety for a time by advertising, etc , but unless it has merit, it is soon thrown aside To see a remedy grow continually in favor as this serum has, is a good proof of its reliability

Jenner, many years ago, by his investigations, gave to mankind a virus that stopped the ravages of small pox, and the terror of this disease is gone and it is almost totally eradicated from the earth and kept in absolute subjection

Diphtheria is now controlled, and many cases cured by the anti-toxin serum Many cities now have depots with this serum under the management of their boards of health It undoubtedly has saved many lives, and physicians feel that they have a reliable remedy for this great enemy of childhood

On the same line of reasoning we have the anti-tubercular serum, made from the blood of the horse, for tubercular troubles Instead of this serum losing ground as many other treatments have done, it seems to be gradually gaining in popularity By the use of the microscope the investigations of so many along the line of tubercular diseases, it is to be hoped that before long we will have on this same line of reasoning a remedy we can absolutely rely on, as we do now on the smallpox virus and the antitoxin for diphtheria I have reason to believe such a time is approaching, and this would relieve the human family of another of its destroyers and greatest enemies

While the cases I report are not numerous, my experience with these and others proves to me that there is something in this treatment well worth investigating I must insist, however, that if a physician uses this serum on a patient, it shall be used regularly and continuously and be under the supervision of the physician For using it a week or a month, then tiring of it, will simply bring reproach on the remedy and no permanent good to the patient Intestinal antiseptics such as guaiacol, sulpho carb zinc creosote, sat sol sod borate, or any other good intestinal antiseptic should be used internally Borolyptol, lysterin and other antiseptics sprayed into the mouth and fauces as the physician thinks necessary Good food, fresh air, all these favorable conditions must be recognized and used in connection with the serum Some will say, tuberculosis will improve under this treatment without the serum, perhaps improve, but not cure

When a case comes to us with night sweats, hectic fever, temperature 101 to 103 evenings, pulse 100 to 120, patient fast losing flesh no appetite, profuse expectoration or a dry, irritable cough, and on auscultation and percussion undoubted signs of tubercular disease, and all these symptoms confirmed by the microscope, we know what these conditions mean

When we begin with this serum and in one week the night sweats are lessened or entirely gone, better sleep, appetite improving, and in one or two months a gain of five, eight or fifteen pounds, we then *know* some great change has been wrought in the system I *have had many such results in relieving cases* The microscope was used in every case by a competent bacteriologist to confirm the diagnosis made by the physical examination

Case 1 —First stage --In March, 1897, I began treating young C , aged 11 years His mother had died of phthisis one month before He had been ill for three months Mornings, had profuse expectoration full of tubercular germs, as shown by the microscope Hectic flush, loss of appetite, and fever at night I treated him forty days, and had the satisfaction of seeing him restored to health, with a gain of eight pounds in weight and a growth of almost an inch in height in four months A complete cessation of cough, and on auscultation and percussion, no abnormal sounds could be heard Have examined *him every month since, and he seems perfectly well Nearly a year has passed and no return of symptoms No medicine* was used in this case except an occasional dose of mild hydrarg chlorid as a hepatic stimulant.

Case 2 —First Stage —Mrs P , aged about 40, in May of 1897 applied to me for relief from a severe cough with slight expectoration Tubercular deposit in apex of right lung, microscope confirmed diagnosis, but few bacilli observed I treated her for three months daily with the serum, effecting a complete cessation of cough Muscular weariness and cachexia of tuberculosis gone She rested one month from treatment, then I gave her another month's treatment of the serum I used no medicine in this case but the serum, excepting an occasional dose of mild hydrarg chlorid Up to date she is well and carrying on her business (typewriting in a large office where there are many people and very bad air) Her mother died of tuberculosis

Case 3 —First stage —Mrs H , age 29 years, began treatment in June, 1897 Mother and father died of tuberculosis. Had been sick six months Appetite poor and tubercular cachexia marked Was a very large woman, five feet, eleven and one half inches in height. Normal weight 200 pounds When she began treatment weighed 160 pounds Microscope confirmed diagnosis of tubercular disease A deposit was located in apex of both lungs I treated her daily for one month A change for the better could be noticed in two weeks The second month I treated her every other day I then sent her to San Diego for two months, expecting her to return for two months' more treatment She returned, but was so well that I considered it unnecessary to pursue treatment further Her weight after four months was 200 pounds, cough *gone, lungs cleared up, and on auscultation and percussion* no abnormal sounds could be heard A peculiar circumstance in connection with this case was a complete cessation of a profuse uterine catarrh, which she had had for several years

Case 4 —First stage —Miss D , aged 26 years, applied for examination in December, 1897 For six months had felt tired languid, and could not endure her clerical work so had to give up her position Middle lobe of right lung showed a small tubercular deposit. Expectoration very scant, appetite poor Tuberculosis in family, aunts and uncles died with it, and it is supposed she contracted it from them, as they died at her home with tuberculosis several years before A brother, of whom I will speak later on, has the disease A peculiar feature of this case was a dry, scaly dandruff condition of the skin over the shoulders and back It made no difference what care she took of herself in bathing and applications, this condition persisted After using the serum treatment for two months the skin became healthy and has continued so All symptoms of tuberculosis gone and she is now in good health

Case 1 —Second stage —Mrs G , aged 37 years, applied to me for treatment in December, 1896 Mother and one died of tuberculosis Was sick for six mo before for treatment Normal weight 125 pounds When beginning treatment weighed 115 pounds Hectic fever, night sweats, loss of appetite, and a burning sensation beneath left clavicle The diseased spot was in the upper lobe of the left lung I found one small cavity Moderate expectoration of mornings I treated her three months daily with serum and she improved rapidly At the end of four months had gained in weight to 135 pounds, more than she had ever weighed in her life I used but little medicine, only correctives At the end of this time cough had disappeared This case used the serum per rectum two months after I stopped using it with the hypodermic I have examined her in the last three months and find her perfectly well

Case 2 —*Second stage* —Mr W , age 24 years, a young German Father and brother died of tuberculosis He had been ill about six months Frequent cough, profuse expectoration, sleepless nights, loss of appetite, night sweats and hectic fever, pulse 95 to 110, temperature from 1 to 2 degrees above normal in evenings, weight 145 pounds Normal weight 170 pounds Tubercular deposit located in upper lobe of right lung Small cavity Microscope confirmed diagnosis Was treated two months daily with serum After two weeks temperature and pulse normal Gained fifteen pounds during the first three weeks Expectoration gradually declined until at the end of six weeks it had almost ceased No one could have changed faster from a fast decline back to health than did this man He left the city after the second month's treatment feeling as well as he ever did, and had regained his normal weight

Case 3 —*Second stage* —I class this patient in the second stage, having been affected for about five years with a general systemic tubercular poison, and for eight months marked throat trouble, indicating laryngeal phthisis Mr D , age 24 years, brother of Miss D of whom I have already spoken, applied to me for treatment in November, 1897 Weight 130 pounds For several years had been feeling badly Had no cough, but had catarrhal secretions from fauces which caused an occasional clearing of the throat A depressed feeling of lassitude, skin dry and scaly, hair poorly nourished, and marked tubercular cachexia At times would have fever for one, two and three weeks, then better again This fever was supposed to be malaria Had taken most all kinds of tonics, had been to springs, and was away from home every summer to the mountains Examination of lungs proved negative The secretion from the throat being examined by the microscope showed large quantities of tubercular bacilli His whole system was perfectly saturated with tuberculosis I treated him daily for three months and he improved rapidly Tubercular cachexia cleared up and skin changed to a red glow of health I also used an antiseptic spray for the throat several times a day Made applications of argent nit., tincture of iodin and glycerin in the throat This patient is now using the serum at home every other day under my direction I see him weekly and he is doing well

Case 1 —*Third stage* —Mr S , aged 29 years, applied to me for examination in September, 1895 He was taken ill in June of 1895 with what he considered at that time malaria Had a cough several months previous He was a cigarette smoker, and a "speedy" young man in every sense of the word His mother had died of tuberculosis several years before His lungs broke down rapidly, and when he applied to me for treatment in September, he was in the third stage of tuberculosis One quite large cavity in the upper lobe of right lung Infiltrated spots throughout different portions of the lungs A terrific cough and profuse expectoration Had had three hemorrhages before coming to me Three to five night sweats every night He returned home taking tonics with him He returned to me about the first of November, 1895, very much emaciated with loss of appetite and profuse night sweats I placed him under the care of a professional nurse for one month, with all these symptoms three or four months at the longest, under ordinary treatment, would surely have been as long as he could have lived I put him on tonics antiseptic sprays for lungs, and at once began injections of anti tubercular serum I had not used it five days before the night sweats had almost ceased, slept better, appetite better, and after a few weeks the infiltrated spots in the lungs were fast clearing up His fever ran lower, pulse lower, and he was fast improving When he first applied to me for treatment his temperature was 103 evenings, pulse 125 to 130, and at the end of the month he was so much better that he dispensed with the nurse and began going out to theaters and various places of amusement, entirely against my wishes, still he took his serum regularly, and both of us were very sanguine of permanent results He began his excesses in the old way of "wine and women," but still improved He was very well when he left me after four months treatment. He was able to attend to his work, very little cough, and had no hemorrhage while I treated him After he went home he continued these excesses About two months of this kind of life, and the neglect of the serum, he suddenly had a severe hemorrhage, then gradually went down. He went to the mountains The serum treatment was entirely neglected, and he lived almost a year after this hemorrhage This man was on the road to recovery and we might say deliberately suicided The wonderful change wrought in him by the serum gave me to understand that I had access to a remedy that I could hold out some hope to the tuberculous patient, for it had undoubtedly turned a patient most dead with tuberculosis back to health and normal strength, and by his own recklessness he had fallen again to its ravages This was the first case I treated with anti tubercular serum

Case 2 —*Third stage* —In the spring of 1896, Mrs B , of Chicago, aged 42 years, applied to me for treatment for a continued cough She informed me that she had had trouble for three or four years, and her physician had sent her to California, for he did not think she would live long in Chicago climate Mother and father both died with tuberculosis Microscope showed large quantities of tubercular bacilli She had two hemorrhages, one before, and one soon after I began her treatment. Small cavity in central part of upper lobe of right lung I treated her six weeks She then went to St Louis and continued the treatment for three or four months She spent the winter of '96 and '97 among the pines of North Carolina and returned to California in the fall of '97 She was perfectly well and all expectoration had ceased In this case I combined tonics and cod liver oil with the serum treatment.

Case 3 —*Third stage* —Mrs C , aged 36 years, in November, 1896, applied to me for treatment, bad cough and had not been well for nearly a year Had a severe hemorrhage just before beginning the treatment. Was bedfast Pulse 120 to 130, temperature 103 every afternoon No night sweats, but loss of appetite and very much emaciated Mother, two sisters and brother died of tuberculosis Her normal weight was 125 pounds Weight when she began treatment 105 pounds I had trouble the first two weeks in giving her the serum It had quite a severe reaction on her but in three weeks she began to improve The fifth and sixth weeks she gained one half pound each day Then she slowly gained until her weight was 123 pounds I treated her until February 1897, when she returned home and used the serum per rectum, but it did not have as good effect on her as by hypodermic, causing her severe nervousness and prostration In May 1897 she returned to me and used it one month, and she improved rapidly Again returning to her home, used the serum hypodermically She returned to the city and I treated her during August and September of 1897 On account of some pus in the sputum at this time I used the anti-streptococcus serum for a few weeks which had a decided effect on clearing up the expectoration She is using the serum now, changing occasionally to antistreptococcus serum She is in good health, but not entirely well Expectoration is almost gone This case would have done better had she been under my observation all the time, but on account of her family it was impossible for her to remain with me continuously In this case I used proto nuclein, cod liver oil, and strych , at times, as a nerve stimulant She is now using carnogen, the red and white marrow of beef, instead of cod liver oil, and is gradually improving This case is still under my treatment with the serum The microscope was used about eight months after beginning treatment and the slides compared, showed a large decrease in the tubercular bacilli

Case 4 —*Third stage* —Mrs L , aged 57 years, applied to me for treatment in the fall of 1897 Family history shows tuberculosis Father, mother, and all her brothers and sisters died of tuberculosis Had been affected for twenty five years Microscope showed quantities of tubercular bacilli Percussion and auscultation showed right lung almost gone Cavities in left lung, profuse expectoration, occasional night sweats, bad dyspepsia temperature ranging from 99½ to 102 evenings, pulse averaged about 80, tuberculous ulceration of bowels causing more or less diarrhea For some years was obliged to eliminate many things from her diet, such as tomatoes, lemons, peaches, and all fruits of an acid nature I used a mixed treatment in her case of anti tubercular serum and anti streptococcus, it lessened her cough. In two months her appetite was improved, she could eat anything she desired and no bad results from it. After three months treatment she went away from the city and was using the serum per rectum I have not heard from her since she left San Francisco I could not expect any permanent improvement in such a case as this, though she was much relieved I gave her intestinal antiseptics and proto nuclein, and also iodoform capsules internally in connection with the serum.

Case 5 —*Third stage* —December 2, 1897, I was called to see Miss B , age 26 years She had been treated by tonics, creosote and the same old treatment with which we are all familiar She had been ill for six months This patient was almost dead The microscope showed tubercular bacilli in abundance Her pulse 150, temperature 104½, examination of lungs showed upper lobes of both badly affected from apex down Severe night sweats, and almost an absence of digestion with such ferment in her bowels that she suffered severely with them Her whole system was saturated with tuberculosis So bad was this case that I thought she would die before two weeks, and considered it useless to treat the case as others had given her up On the earnest solicitations of her relatives I began treating her , using anti tubercular serum, and at the end of four days had the amount of serum per dose up to twenty drops, which is double the amount for that time in ordinary cases She then began to feel better I placed her on intestinal antiseptics Her digestion improved and the night sweats ceased entirely At the end of the first month she was able to take a ride every day, if the weather would permit During the second month she had a relapse on account of a small abscess forming and breaking in the right lung She again improved At the end of three months she took the measles, this was serious for her, but she came through all right At the end of four months she went to the country, and is using the antitubercular serum per rectum She is still living and feeling well, but not improving Her pulse came down to 80 and 90 from 130 to 150, temperature normal of mornings, and 100 to 100½ evenings, and at times normal of evenings Digestion good, appetite good I had a decided effect in this case in assisting the serum treatment by the use of sat sol of borat sod one ounce each day per rectum, a tablespoonful three times a day internally I think this a fine addition in the treatment of tubercular diseases

I have selected these twelve cases for report, as they are about average cases with me To recapitulate

Five cases—third stage —One dead, one benefited some, one greatly benefited, one well, one living six months after being given up to die at any time

Three cases—second stage —One greatly improved, one well over one year, one improving fast

Four cases—first stage —Four well

I advise tonics cod-liver oil, antiseptics sprayed in the throat and lungs of boro-lyptol, listerin, etc I advise two or three times a week an enema or normal solution of sod chlorid per rectum and flush the colon This acts as a disinfectant, and the absorption of a portion of this solution in the circulation is very beneficial to the patient Then I wish to impress the good of using sat solut of borat sod , tablespoonful internally three times a day, and about an ounce injected each day in the rectum When pus exists in the sputum, I advise the use of anti streptococcus, alternating with the anti-tubercular serum, and the effect is at once marked

My success has been so great in many other cases and I feel that I can almost insure a case in the first, or incipient stage, where the cavities are small, that many will improve, and at times recover even in the second stage, and occasionally in the third stage

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MODERN METHODS IN THE TREATMENT OF TUBERCULOSIS

Presented to the Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association, held at Denver, Colo June 7-10 1898

BY WILLIAM F WAUGH, A M , M D
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If we believe that for every ill that affects humanity there is somewhere a remedy, it would seem that even through the operation of blind chance there was a fair opportunity for lighting upon the means of curing tuberculosis For in all parts of the medical world there is put into practice a most miscellaneous assortment of experiments The power of suggestion is being demonstrated by the claims made in behalf of nearly all these essays The need is so terrible, the boon to humanity would be so enormous, that one must look with kindly sympathy upon the man who desires to succeed

The fact that success in this matter means so much to humanity demands from us most careful scrutiny that no really valuable idea shall be lost on the most critical examination, that no delusion shall be permitted to prevail Should my remarks, therefore assume somewhat the shape of criticism, it is with no unsympathetic or pessimistic spirit, but with the earnest desire to favor the truth

First, we will consider the climatological aspect of the question When we inhale the pure breezes of Colorado we do not wonder at the enthusiasm that prevails among the residents as to its salubrity We recognize at once that this is founded upon reason, not upon commercial scheming We have sent our patients to the Denver region for years, and can readily recall notable instances of its restoration or even curative effects But that all cases are not thus benefited is sadly attested by the monuments in yonder populous city of the dead We trust that the physicians of Denver, who have such exceptional opportunities for the study of the question, will give us clean and definite instructions as to what cases should be sent here, and where to send the others

At present we have some valuable but scanty data upon which to base our advice Incipient cases do well here, as they do in most places, the best results are obtained in these instances in which the diagnosis is inferential rather than positive But hemorrhagic cases ascend to this altitude with peril They fare badly here as well as at the seashore, so that their destination is problematic Beside the conditions of the case, there lies behind this a consideration as to the personality of each patient The effects of climate are not now believed to reside in the power of any atmosphere to starve or to poison the micro-organisms That climate is best for each person, that most conduces to his physical health, that allows him to live the most wholesome life as an animal, usually, in the open air, with sunshine, and free ventilation

Broadly speaking, mankind is divisible into two classes Types of both may be found in the same family If one feels strong and vigorous in the pure, cool thin air of the hills, to the hills he should go, but if he feels bad here, and experiences a sense of comfort, of exhilaration, of renewed vitality when he smells the damp air of the salt meadows, he will there have the best chance for cure Beyond this, and the injunction to keep as far as possible from other cases of tuberculosis, there is little of certainty in the choice of a climate As to the effects of any atmosphere upon cases of tubercular, streptococcus, staphylococcus and mixed infection, upon primary microbic affections and these engrafted upon previous inflammatory processes, we have as yet but a feeble light The hope of securing more has brought many of us to Denver

Of the various forms of serum therapy, I shall say but little, as the program is filled with numerous papers by those who are better qualified to speak Be they successes or failures each marks an approximation to the truth, if it be but by clearing the way for further experiment They are commendable in that they are based upon a study of the pheno[illegible]a of the disease and of the [illegible]ed [illegible]ogy of the micro organisms present Surely if success be obtainable, it is in this direction

In this connection I will present some facts worth considering Tuberculosis is separated from the large majority of microbic affections in that it is not self-limited or self-protective Tuberculosis is also distinguished from the majority of such affections in that we do not find leucocytosis attending it Can we correlate these two facts, and infer that the failure of self immunization is due to the fact that nature has here failed to combat this disease by a multiplication of her defenders, the leucocytes? If, so, we may find value in that singular discovery of Vaughan, that nucleinic acid increases the number and activity of the white blood corpuscles This hypothesis, pregnant with possibilities that may change the science of therapeutics and vitally modify the history of the human race, is all the more worthy of commendation in that it brings us back to the truest basis of therapy, the study of the physiologic conditions aberrant in disease and utilizable in its treatment The finality of therapeutics must be the comprehension, restoration and maintenance of a normal physiologic state

But vastly important as are the germicidal elements, and the value of climate as a means of reinforcing the vitality to the point of rendering it victorious, they are by no means our only weapons The armamentaria with which we relieve the various symptoms of tuberculosis require no mention on my part, but I wish to speak of two agents that have served me well Many years ago I heard Samuel H Dickson say that when we learn to control the digestive disorders of consumption we would cure that disease I need not more than refer to the difficulty of feeding these patients, the anorexia, dyspepsia, constipation and diarrhea, malassimilation, etc , marking their history But all these disappear under the use of calcium sulfocarbolate, and with them from one to three degrees of the fever, and in all, from 30 to 60 per cent of the sum total of the symptoms and phenomena is removed by this single expedient These results have followed so uniformly that I feel warranted in suggesting a trial of this salt I have given it daily in doses of 2 and 6 grains for nearly two years without any discernible objectionable effects

The other agent is iodoform In some consumptives there appears to be a tolerance of this drug, as they have taken from 10 to 20 grains daily for months without any symptom of iodism, while this unpleasant condition has followed the use of four grains daily in non-tuberculous individuals Whether its effects be germicidal, absorbent or simply those of a pulmonary and analgesic, or of all three combined, the use of this remedy has given me better results than any other pulmonary germicide

THE PSYCHOLOGY OF HABITUAL CONSTIPATION

Presented to the Section on the Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association held at Denver Colo June 7-10 1898

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Among the great phenomena of nature one of the most interesting is that of the rhythmic action of her forces in obedience to ever constant laws The cycle of darkness and light that measures a day, of recurring seasons that calendar a year, of ocean's tidal ebb and flow that mark her throbbing pulse- all these are but so many demonstrations of a universal law of rhythm In our bodies similar laws of periodicity are essential to organic health or even to life itself Restful sleep must follow wakeful toil in just proportion and at proper intervals Respiration and circulation are dependent upon ever constant, regulated muscular impulses The processes of digestion, assimulation and excretion obey this same law of rhythm So long as these periodic forces are undisturbed in their rhythm by careless or vicious habits of the individual, or by accidental and pathologic changes beyond his control, healthy, organic functions are assured

Mental control of rhythmic functions —The control of these rhythmic forces is for the most part, outside of and beyond our conscious mental appreciation They act with automatic precision whether we wake or sleep, little influenced by our wills, our desires or our reasoning faculties They are said to be controlled by the great sympathetic nervous system which connects the various organs of the body in their functions, with ganglionic and cerebro-spinal centers This is not true in a literal sense, for this wonderful system is itself only a mechanism, an intricate co-ordination of communicating lines, sensitized for the transmission of impressions to and orders from a central governing intelligence Whether we accept the theory of a dual mind or not, we are forced to the conclusion that this marvelous labyrinth of communicating sympathetic nerves and the organs to which they are distributed, and hence the functions of these organs themselves are dominated by a never sleeping, ever acting intelligent entity

Since we know these functionating organs and their special nervous systems act for the most part independently of our objection primary consciousness and volition, we are impelled to the belief that they are controlled by a sub conscious, instinctive faculty of the mind which regulates all the automatic movements of the non striated muscles, that it presides over the functions of every organ of our bodies, and that it is capable of being reached and directed itself by psychic influences from within and without To show this psychic relation and control over the peristaltic action of the bowels and the function of defecation, as well also the practicability of relieving habitual constipation, of non pathologic origin, by psychic methods are the problems set before us in this paper We are confident, if their solutions are made evident, a flood of light will be thrown upon many other functional derangements and their rational treatment made plain, a treatment too little appreciated and too often flippantly ridiculed and dismissed by thousands of good physicians who have not investigated the worth of suggestive therapeutics

Peristalsis and defecation —The essential physical element in the act of defecation is peristalsis A clear understanding of this function is of vital importance in this discussion Peristalsis may be defined as a peculiar rhythmic contraction of successive muscular fibers of the intestine This undulating movement extends through the length of the canal and is called the peristaltic wave It is less active in the large than in the small intestine Its function in the upper bowel is, 1, to assist in mixing the food from the stomach with bile and the digestive ferments of the pancreas and intestinal glands, 2, to bring nutrient matter in contact with large absorbing surfaces, and

3, to impel waste material toward the lower bowel In the large intestine and rectum its function is chiefly that of evacuating their contents The rectum receives its innervation through the rectal plexus of the sympathetic system Its communication with the cord and spinal ganglia lies through the sacral plexus Its communication with cerebral centers lies through the hypogastric and the solar plexus, and reaches the brain through the pneumogastric nerve Thus the muscular structure of the intestines is connected by two routes with the central nervous system, from which all primal impulses emanate

The act of defecation is accomplished by the increased peristalsis of the descending colon, sigmoid flexure and rectum upon their fecal contents, assisted by the fixation of the diaphragm and voluntary pressure of the abdominal muscles We have said the essential physical element in the evacuation of the bowels is peristalsis Let us bear in mind that normally it is a rhythmic, physical force, that the mechanism, nervous and muscular, by which the phenomena of peristalsis and defecation are accomplished are necessarily dominated by an intelligent, regulating mentality, which sends out these impulses to rhythmic action

Peristaltic stimuli—Any agent which promotes peristalsis will favor evacuation of the bowels This stimulus may be 1 *Mechanical*, acting on the peripheral termini of the sympathetic nerves, which convey their impressions to the central intelligence, which in turn sends out its motor peristaltic impulses Such a stimulus is normally excited by the presence of feces in the lower bowel, by foreign substances like seeds, bran of wheat, oats or corn, by ptomains from bacterial life or protozoa, by massage and physical exercise 2 *Thermic*, as seen in excessive peristalsis of diarrhea from extremes of atmospheric temperature Brief applications of hot or cold compress or enema will arouse peristalsis 3 *Electric* 4 *Chemical*, by the physiologic action of drugs, the details of which would be out of place here We may dismiss them all as temporizing expedients, whose effects are fleeting while the habit remains uncured It is safe to say the bulk of the drug trade centers about aperients, laxatives, cathartics and purgatives, exploited by the commercial enterprise of proprietary medicine men, self-prescribed by the laity or directed by the apothecary or profession, all for the relief of chronic constipation And so the drugging goes on as it has for ages, while the specific drug is yet undiscovered that will cure the constipated habit Why? For the simple reason that it *is* a habit Habits are psychic affairs and not amenable to the physiologic action of drugs This leads us to the most important agent of all 5 *Psychologic* Every day experience teaches us that the intestinal canal is often profoundly acted upon by mental states Many nervous people have peristaltic unrest The excitement of certain emotions, anxiety, fear, anger and the like are soon followed by an action of the bowels, which may even become a diarrhea Many actors, singers and public speakers are greatly annoyed in this manner as a result of "stage fright" Emotional people sometimes have what is termed "hysteric diarrhea" When a person is in a proper state of susceptibility it is possible to cause defecation by the suggestion that at a given time the *feeling* or desire (peristalsis) for stool will occur All these are purely mental influences and show conclusively that the mind in its manifold properties has a faculty which presides over the function of peristalsis and that it is susceptible to both internal and external psychic influences

Etiology of habitual constipation—*a* "Torpidity of the bowels" (Osler) is usually given as a cause of constipation This is an explanation which does not explain It is like the logic used before the laws of gravity were understood, when water was said to flow down hill because of its aquosity Torpidity simply means sluggish or absent peristalsis The *why* it is so is the *real* cause This lies beyond the nerves and muscles of the intestinal canal, which are merely the mechanical appliances of a controlling force in the brain *b* "Sedentary habits, particularly in those persons who eat too much and neglect the calls of nature" (Osler) One habit may induce another, but sedentary habits are not the primary cause of constipated habits Over-eating, on the contrary, should stimulate peristalsis by reason of more bulky stools In the neglect of the calls of nature, however, lies the *essential cause* of functional or habitual constipation (With constipation from pathologic causes this paper does not deal) Contributing factors there may be, but without this neglect, which has its origin in the mental processes of the individual, and hence is psychic, there would be no habit constipation What is this "call of nature?" We take it to be the periodic, rhythmic peristaltic impulse which has been directed by that subconscious faculty of the mind which controls the sympathetic system, and is incited to action by various reflex stimuli for the physiologic purpose of defecation The voluntary co-operation of the individual with these "calls of nature" must be reasonably prompt or the rhythm becomes disturbed, the "calls" less imperative, less regular and in the end functional constipation is the penalty Nature defeated in her plans becomes inhibitory The patient must now resort to many artificial expedients to coax the "feeling" back again Dietetic and hygienic measures, physical exercise and massage, electricity and drugs may be contributing aids, but the essential factor in setting up once more the disturbed rhythmic impulses must necessarily be the re-establishing of *psychic* control This fact is overlooked in our textbooks in the treatment of this ailment

To speak of chronic constipation as a mental and not a physical disorder may at first thought seem rather amusing Some who have given the subject little consideration, will dismiss the idea as ridiculous Let them still be joined to their cathartic idols The overwhelming proof that it is so, is the fact that psycho-therapy is capable of re-establishing the function in a great many individuals without the aid of drugs or accessories The truth of my proposition that habitual constipation is psychic and not physical in its causation is half way acknowledged (though unconsciously) in the conventional instructions given patients to observe faithfully a regular time for going to stool, and whether the desire is present or not, to persist in going through the motions, with the hope that the "feeling' will eventually return with regularity Did it ever occur to these practitioners that such a method is very effective mental suggestion? That in their therapeutic wanderings they had finally erected an altar to the unknown God? Him would we declare to you

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*Osler says "Much may [illegible] done [illegible] systemati[illegible] h-
its, particularly in [illegible] desire
stool should always [illegible] ful

into the habits of constipated people will elicit the fact that they have been negligent in this very essential Especially is this true of women patients, who are the greater sufferers from constipation For psychologic reasons they sin grievously against themselves in neglecting a function which can be normal only when its rhythm is heeded A woman, for trivial considerations, easily defers this call "to a more convenient season" By environment and disposition she is less systematic than a man A neighborly gossip, a *household affair, a feeling of repugnance or* downright indolence will often interfere with this important duty Front door vanity and cosmetic effects are often more important, to her way of thinking, than back door sanitation and rules of health She is quite apt to look upon defecation as a disagreeable nuisance, to be avoided when possible, to be hurried through with or incompleted when necessity arises No wonder a function which normally should be a real pleasure, and productive of a sense of comfort and well being, becomes an irregular, straining, pile-producing effort And so with the established ills of induced constipation the victim resorts to cathartic teas, syrups, powders and pills for a relief which can only be temporary

We wish to give emphasis to the fact that *habit* is a very large word That all habits, whatever their *tendencies*, are of psychic origin That in habitual constipation, with or without other therapeutic aids, suggestion or psychic influence in some form is the only efficient agent that can re-establish a rhythmic peristaltic habit

We have shown how peristalsis may be accomplished artificially by the temporizing stimuli of drugs, etc, and they have their proper uses as well as their abuses, but there can be no cure of habit constipation until the initial psychic impulses become once more automatic The drug has not been found, and, from the nature of the case, never can be found, that will re establish an intuitive mental impulse *Of* necessity drugging will go on as a make shift in perpetuity, until the profession recognizes the psychology of habits and their only possible cure by psychic means

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REPORT OF A CASE OF EPIDEMIC CEREBRO-SPINAL MENINGITIS WITH RECOVERY FOLLOWING LUMBAR PUNCTURE

BY PETER BASSOE, M D

INTERNE IN THE SERVICE OF PROF GEO F BUTLER, COOK COUNTY HOSPITAL CHICAGO ILL

In the Journal of the American Medical Association for July 2, Dr J B Herrick reports a case of cerebro-spinal meningitis, in the postmortem of which the diplococcus intracellularis meningitis of Weichselbaum was demonstrated in the meningeal exudate From this fact and from the large number of cases of meningitis observed in Chicago during the last months, the Doctor concludes that we have to deal with a mild epidemic, although the micro-organism had never been demonstrated before, probably because a bacteriologic examination has been made in but very few cases

The following case further proves the existence of genuine epidemic meningitis in Chicago at the present time

The patient, a *Russian* laborer, 45 years old, previously in good health, was admitted to treatment under Prof Geo F Butler in the Cook County Hospital, June 17, 1898 Five days before admission he had been suddenly taken with vomiting and diarrhea, followed by severe headache, backache and pain in the extremities An outside physician sent him to the hospital with the diagnosis of trichiniosis When first seen at the hospital he complained of severe headache, mind was very dull, patient constantly stroked his head and neck with his hands and groaned, great tenderness on pressure, pupils contracted and equal, reacted normally, no ocular or other paralysis, pulse regular, full and soft, 48 beats to the minute, temperature 98, respiration 28, no eruption, examination of chest, abdomen and extremities absolutely negative The night following admission he was in a continuous pain and stupor, very restless, slept a little under the influence of morphin The pulse remained slow, 52–64, and the temperature on the day following ranged between 100 and 101 degrees The bowels were moved by cathartics During the following days the pulse remained slow, while temperature on the 22d reached 103 degrees, with a pulse of 68 Headache and mild delirium continued No new symptoms were observed, except a slight right-sided, facial paresis An ophthalmoscopic examination on the 22d showed no change in the fundus, there was a marked cupping of the disc on the right side The delirium became more marked and continuous, headache and tenderness, with *rigidity of the neck, persisted*, but under the influence of bromids or morphin the patient slept four to six hours during the night The pulse *increased in frequency*, on the 25th it ranged from 100 to 120, temperature 100–102.4 degrees

The diagnosis of meningitis having been made, and in order to ascertain the kind of micro-organism present, a lumbar puncture was made on the 26th A fine needle was introduced between the second and third lumbar vertebræ, one-half inch from the median line, the cerebro spinal fluid escaping drop by drop, each drop being distinctly cloudy, 20 c c were withdrawn No change was noticed in the patient's condition during the removal of the fluid On centrifugalizing the fluid a whitish sediment was obtained consisting almost exclusively of pus cells, most of them greatly disintegrated No micro-organisms were seen in or around the cells Nine human blood serum tubes were inoculated, and on seven no growth appeared In 36 hours minute drop-like cultures were *observed on the two remaining tubes*, which under the microscope were seen to be pure cultures of a diplococcus, with occasional tetrads It proved to be the diplococcus intracellularis meningitis of Weichselbaum, and did not stain by Gram's method

On the day of the puncture the patient's temperature ranged between 99 6 and 100 6, pulse 96-100 The night following he rested better than any night previous and seemed rational in the morning The temperature next day was 97-99 6, pulse 92 100 Since then the headache, tenderness and rigidity of the neck, and restlessness rapidly have disappeared On the 28th maximum temperature was 99 2, on the 29th, 98 8, on the 30th it reached 101, but has been normal ever since On the 27th ophthalmoscopic examination revealed a slight optic neuritis on the right side, only one fourth of the border of the disc could be made out On the 29th this was more marked and present to a less degree in the left eye On July 2nd the optic neuritis was greatly lessened, margins of both discs being distinct June 28th and the two days following there was urinary retention, so that patient had to be catheterized July 2nd the patient sat up, had a good appetite and no headache Since then he has been rapidly gaining in strength and seems to have made a complete recovery

This case adds another to the number recently reported which go to prove that lumbar puncture not only enables us to make, intra vitam, a bacteriological diagnosis of the different varieties of meningitis, but also that it is the only therapeutic agent which is of more than a palliative value in the treatment of the disease

SOCIETY PROCEEDINGS

The Medical Society of the State of New Jersey

One Hundred and Thirty second Anniversary at Asbury Park, June 28, 1898

First Day

The session was opened on Tuesday, the 28th, at 3 P M, with the transaction of much routine business, action upon certain matters relative to the society and reports upon ethics, honorary membership, etc.

In the evening the address of the President, Dr D C English, was delivered

Dr English congratulated the Society on its one hundred and thirty second anniversary, extended a welcome to the visiting brethren from sister societies, returned thanks for the distinguished honor conferred on him by a society that was not only ten years older than the nation, but had a record surpassed by none in devotion to the highest interest of the profession and in loyalty to the State and sacred behests of humanity He referred to some of the official changes in the Society the past year, especially to the death of Dr J J H Love and his appointment of Dr William Pierson in his place as Third Vice President and Dr W J Chandler in his place as Recording Secretary He announced his subject as

PATRIOTISM IN THE MEDICAL PROFESSION

as exhibited in the past and as it may find fuller expression in time to come After defining patriotism he spoke of the four wars through which the nation had passed, culminating in making the country, indeed and in truth, "The land of the free and the home of the brave" He then spoke of the fact that the Society was in session while the fifth great war was in progress, which was partly the reason for the choice of his subject, which he characterized as a righteous war, less selfish than any of the others in that it was fought in others' behalf rather than our own, that England and other nations had permitted the shocking atrocities practiced toward the Armenians, that America had taken the lead and is today the nation that stands for justice, righteousness and humanity, offering to sacrifice her resources of men and money as far as needful to relieve the oppressed He then proceeded to demonstrate that in no class of citizens had patriotism had greater manifestation or been exhibited with as much unselfish devotion as by the medical profession, and it was considered under two heads patriotism in times of war and in times of peace He considered under war, chiefly that of the Revolutionary War, and of that only New Jersey's record, giving much interesting historic data concerning the profession and the part played by it in distinguished position both in the army and the chief positions of influence, showing that advance in medicine and the development of a strong sentiment of patriotism dated from the French and English war (1758–66), giving brief sketches of the fourteen early presidents of the Medical Society of New Jersey, who bore an exceedingly conspicuous part during the war, and also the names of sixty six others who served ably in the army and in Congress and other civic positions, of the fact entered on society records that because its members were so actively engaged no session was held from 1775 to 1781, that these men were men of culture, of decided religious character and great influence in their respective communities "These patriots not only fought the battles, gained the victories and secured our independence but were patriots wise enough and true hearted and virtuous enough to see that victories won and independence gained amounted to but little unless the foundations of the government were laid strong and secure, and that patriots who were true to God, to liberty and righteousness were placed in power to build enduringly We have observed that these patriotic physicians not only fought well and performed their high and holy mission faithfully, but they served as well in official positions" "They were incorruptible office holders, they were upright judges, they were politicians in the highest sense of the word, who loved country more than party, they used no corruption fund, and the people were not of that kind who sold their birthright for a mess of pottage" Reference was then made to the War of the Rebellion, giving the members who served and their faithfulness, and fitting reference made to Dr John Blair Gibbs, the first martyr who fell on Cuban soil in the present war, who formerly lived in New Jersey and was educated at Rutgers College

Dr English then spoke of patriotism in times of peace, in which it had its highest, noblest and lifelong manifestations, vastly more important, as peace is preferable to war, the public good, the very purpose for which government exists, of the exhibition *often amid struggle*, self denial and often self sacrifice, the saying that "Peace has its victories no less renowned than war," was not poetic fancy but solid statement of veritable truth He dwelt upon 1 Scientific observation and research as involving pecuniary sacrifice, sometimes the sacrifice of life and often reproach and opposition "as fine, sickly sentimentalists and cranks, who in their devotion to a few dumb animals are willing that multitudes of human beings shall suffer and die" 2 Its exhibition in the work of the State Medical Society, which has been purely in the interest of the public and in most cases against the pecuniary interest of the profession 3 In the cause of education The work done and acknowledged by educators was dwelt upon The Doctor urged the teaching in schools of the manner of the spread of contagious diseases and methods of prevention, especially why disinfection and isolation are required, and then impressing by the use of diagrams that sanitary measures are effective 4. In the cause of state medicine, "preventive medicine is the crowning blessing the medical profession has conferred upon humanity and is the embodiment of the highest type of patriotism the world has ever witnessed, for it is virtually in the final attainment of its aim the profession sacrificing itself" He quoted Professor Gross "The great question of the day is not this or that operation, not ovariotomy, nor lithotomy, nor hip joint amputation, which have reflected so much glory upon American medicine—but preventive medicine" He dwelt briefly upon the work in this country and then some of its results, especially in New Jersey, giving the ten leading preventable diseases for the ten years, 1888–98, the great saving of life and what it meant to the State He urged strongly the introduction throughout the State of the medical inspection of schools, both as one of the most effective measures for the prevention of the spread of contagious diseases and of eye troubles, mentioning what has been accomplished in Boston, New York, Philadelphia, Chicago and elsewhere 5 Professional charity was briefly and appropriately set forth, the abuse of medical charity well characterized and some good suggestions offered 6 In political life, medical men in Congress and the State legislatures, their influence, opportunities and duties were briefly considered, as well as their influence and duty in election of good men and securing good legislation The open saloon with its iniquitous treating customs and political influence, and the curse of syphilis were touched upon In reference to the National Board of Health the Doctor spoke as follows "Efforts have been made for years to secure a National Board of Health, which would be of incalculable value and blessing to our country These efforts, however, have thus far been unsuccessful We will not discuss the reasons why, but only express our belief that fear that it might interfere with the schemes and ambitions of others, and the failure in a former measure that was defective in conception and plan are the two serious (?) obstacles that are allowed to jeopardize the lives of millions of our citizens The ambition of no man or body of men should be considered, and as to old failures it is not only puerile argument, but no body of men profit more by the mistakes of the past than medical men In a letter we received from United States Senator Gallinger recently, he says "My sincere conviction is that it will be a long time before the legislation you call my attention to is secured It is much more likely that the Marine Hospital Service will be granted additional powers and that national health affairs will be kept in the hands of those who are now at the head of that bureau" We are at least thankful that the efforts to secure the national board have stimulated Congress to consider the matter more fully than before and make much larger appropriations for health measures, but we desire Congress, the medical profession and the public to realize that these appropriations have been almost entirely for the merchant marine of the United States, for quarantine purposes, the investigation of epidemic diseases in Havana, etc., under the Marine Hospital Service, and any additional powers granted will not enable that department to do the systematic and thorough work that a national board of health with proper adjustment of relations with State boards of health would be able to accomplish The government appropriated in 1896-97 about three-quarters of a million dollars for all public health measures, mainly for the support of the numerous hospitals, the twelve national quarantine stations, investigations, etc., under the Marine Hospital Service, out of nearly three hundred millions total appropriation Certainly it would seem if 141 millions could be afforded for pensions and scores of millions for river and harbor improvements in the interest of commerce (and possibly in some cases to advance political fortunes and aspirations), that at least five millions could be spared and would be most wisely appropriated in caring for the lives and health of the citizens of this great Republic, by the establishment of a national board of health, though no such large sum has been asked or suggested It seems to us that the question is very largely as to whether the great, the vital interests of the United States in matters pertaining to the public health, shall be circumscribed in their scope and field of operation, and shall be committed to men likely to be swerved by political or personal ambitions, who will seek to build up a strong medical aristocracy with autocratic powers that will enable them to enter any State and exercise their supreme authority over State departments, or whether we shall have a public health department established on a purely scientific basis and conducted by scientific men solely for the advancement of the health interests of this great country, in a manner that shall be in consonance with and shall conserve our republican form of government, and shall in its operations embrace the whole country in the advancement of public health by all measures essential to that end We believe there should be a Commissioner of public health appointed by the President of the United States, and a Medical Congress or Commission, consisting of one able sanitarian from each State and Territory, appointed by the governor, that they should meet in Washington in brief session, say once in four months, said commission to formulate the laws under which the work shall be carried on, and the Commissioner to carry out such regulations as the Congress or Commission shall establish, with such limited powers as emergent exigencies shall require It is patent, we think, to every disinterested intelligent person who desires the attainment of the highest and best ends that some such method will avoid, as the Marine Hospital Service will not, all conflict of authority and lack of co operation between the United States and the respective States and will insure the greatest efficiency

In closing, Dr English urged the display of that patriotism which in its enthusiasm obeys the injunction of wisdom "Prove all things, hold fast that which is good" He emphasized the need of caution in making or accepting hasty statements of half knowledge, giving two points in illustration 1 Concerning the general practitioner, because the science of medicine has been wonderfully developing and expanding and knowledge is increasing so rapidly, therefore the general practitioner must go It is not a logical sequence except in some individual cases Because the specialist is a one sided man who magnifies his specialty unduly, brings many cases wrongly within the scope of his specialty, or occasionally treats his brother practitioner non ethically, therefore the specialist is a fraud and a delusion It is not a logical conclusion as to specialists in general, though it may have its occasional individual application. He then quoted from Prof J M DaCosta, and endorsed the work of legitimate specialists 2 Concerning the family physician, his lessened influence was alluded to and deprecated as not being the highest interest of home or country The address closed with earnest words on the dignity of the profession and the cultivation of the ethical spirit as not only conducive to the highest advancement of the profession, but as the loftiest form of patriotism

The reports of the standing committees being next in order, Dr H W Elmer read abstracts from the reports received from the several county societies These consisted of brief accounts of the prevailing diseases in the various sections of the State, the condition of the societies, notices of deaths of prominent members, etc

THE REPORT ON PROGRESS IN STATE MEDICINE AND HYGIENE,

by Dr Henry Mitchell, Secretary of the State Board of Health, said that the distinguishing feature has been the rapid application of laboratory demonstrations for the prevention of the spread of communicable diseases New teachings are not accepted so readily as a conservative course begins to prevail It is still true that the value of sanitation has not penetrated the minds of municipal authorities as it should have done Local health departments give signs of a more promising course than heretofore There is a public demand for better organized sanitary service During the last half century smallpox has decreased 96 per cent. in number of deaths, typhus fever 95, enteric fever 60, scarlet fever 81 phthisis is still too high, though it has fallen 46 per cent. Six hundred thousand persons now reach the age of 21 years who, sixty years ago, would have died In New Jersey the average duration of life is now fifty nine years In the last year the deaths from preventable diseases in the State show a large diminution Great activity has prevailed in every department of hygiene, the bacteria of tuberculosis, it has been found, will float in the air for five hours Bacteria are expelled from the mouth by loud speaking, etc., but not when the voice is low and gentle Small movements of the air will waft them about, danger is great from moisture from the mouth and nose of persons at operations, as sneezing, etc., and the patient may infect the air by heavy breathing Having undergone no attenuation, these bacteria are very virulent Germano has found live bacteria in dried membranes after four months His conclusions are The bacilli of diphtheria can withstand drying for a long time, rapidity in drying does not affect the resisting power, these survive better when surrounded by dust, preventing oxidation, completely dried it retains its virulence till its death, air by dust can carry bacilli while in the living state, so with other bacilli Ventilation of sewers has attracted attention It has been found that the air of sewers does not carry bacteria in great numbers On the contrary, it is singulary free from bacterial life The odors may be disseminated with no bacteria, hence stench nuisances are not necessarily accompanied by the germs of disease They may be a warning that danger is not far off Recent discoveries tend to show that sewer gas only detracts from the breathing of pure air These investigations may hasten the time when the courts will hold that all conditions which impair the purity of the air are injurious to public health and render the individual less resistant to the real danger when it may chance to occur Flushing of drains with fresh air dilutes the gases and the danger is minimized A drain without an intercepting trap is like a house without doors or windows and invites the very evils it was intended to prevent.

It has been found that typhoid fever is not spread by sewer gases In well constructed sewers the sewage passes away freely and without putrefaction and the air is not unhealthful Sewage does not form a medium in which growth of typhoid bacilli readily takes place These undergo destruction in a few days, at most in one or two weeks Hence the conveyance of this germ by sewer air must be exceptional Thiroloix has found the bacillus of acute articular rheumatism in the blood of five persons. Intravenous injections of this organism invariably produced cardiac and pleuro pulmonary lesions He believes the disease may not always be recognized as rheumatic in character because of the absence of articular inflammation It has been agreed that the incubation period of bubonic plague should be held at ten days, though it is generally admitted that it is from three to four days The terms "isolation," "surveillance" and "observation" were defined Isolation consists in absolute separation of the sick from all uninfected persons The latter two signify supervision without detention and passengers are allowed to go to their homes, where they can remain under medical care as long as deemed necessary

Popular interest has been aroused concerning the time honored but not very acceptable method employed by barbers in carrying on their trade, and much has been written by the profession in condemnation of the application of dirty hands, tools, sponges, brushes, soap, etc., to the faces of the patrons of the barber shop, but in only a few shops have steps been taken toward the introduction of aseptic precautions here Inquiries among the manufacturers of sterilizing apparatus does not show that any suitable, convenient and efficient appliance for the barbers has yet been offered These rules may be laid down as an outline of the requirements to which the modern barber should conform in shaving Clean his hands with soap, water and a nail brush, apply to the beard soap paste, using only the hands, keep the razor in a sterilizing oven, when dull, do not strop it, use another from the sterilizer, use no large cloth spreads and towels only to protect the garments, no sponges, puffs pads nor magnesia cake, provide a large sterilizing oven in which the temperature can be kept evenly at 230 degrees and in it keep a supply of towels which have been washed and boiled, use metal combs, wash these after using and keep in sterilizer, hair brushes, if used at all, keep thoroughly washed and clean

He asked attention to the opportunity now offered in Rutgers College to persons who may desire to pursue the occupation of sanitary inspector, to demonstrate their fitness for this work Certificates of ability are issued when entitled, and we may hope this will lead to the employment of sanitary officers of a superior type, and inefficient persons will be replaced in time by skilful physicians, etc

Dr W H. Izzard read the report on

PROGRESS IN MEDICINE AND THERAPEUTICS

He said The practice of medicine has materially changed in the last twenty five years The subject is broad and lapses into the field of all the branches He desired only to make a few comparisons between the practice of today and that of a quarter of a century ago Such teachers as Gross, Pancoast, Wallace, Meigs, Dunglison or Mitchell have not faded much by the shadows of the brilliant men of today Within the time mentioned, a specialist was a curiosity, looked upon with suspicion, if not pronounced quacks Now they are numerous and enjoy perfect freedom and affiliation without question, so much so that most every one afflicted with an affection of the eye, nose, throat, lungs, stomach, intestines, especially in the right side, skin, ovaries, special organs of generation, etc , are sent or go themselves to the specialist, and you see what is left for the general practitioner If this is progress in medicine, then it has been wonderfully marvelous Men of my years, covering a period of thirty years, and there are quite a number present, are today to admit the superiority, method, *modus operandi* of medicine and therapeutics, also the wonderful increase of remedial agents over those at our command twenty five years ago Then the "Materia Medica" recommended for the text-book contained less than 400 pages, large type now large volumes containing twice the number of pages and in small type, then the "Dispensatory" was a small book, now almost as large as "Webster's Unabridged," then it was powders, pills (without sugar) and bitter potions, now the pills are covered with sugar, gelatin, and everything else is compressed into tablets and the rest of the materia medica into sweet palatable elixirs, then we depended upon the pulse to determine the grade of fever, now the thermometer, then we depended upon the lance, quinia and veratrum viride to subdue inflammation now the lance has become rusty and almost totally discarded and new remedies are employed, then morphia and opium were almost solely depended upon to relieve pain and produce sleep, now we have placed in our hands a score of remedies, then we treated and generally cured diphtheria with nitrate of silver and astringent washes locally and quinin and iron internally, now we use thirty six to forty eight hours of time to get a bacteriologic analysis or examination made at Princeton or some other place so we may be sure we have got diphtheria, then a few more hours in getting some genuine fresh and only pure antitoxin, and if we are not in possession of a regulation syringe we spend a little more time in finding some doctor to loan us one, and if our patient is yet alive, we treat him according to advanced medical science, then we used to treat and cure our patients with pain and soreness in the abdomen, especially in the right side, by blisters, mustard, stupes or poultices externally and rest and opiates internally, now we use the knife, a solution of bichlorid of mercury, sponges, needles, thread and a $500 fee, results not mentioned, all marking the most marvelous progress in medicine, then we successfully treated erysiyelas by applying collodium over the affected parts to exclude the air, and quinin and iron internally, now I treat them the same except that I use a mucilage of flaxseed (much cheaper and easier of access) and the quinin and iron internally, I do not know what others use, then we treated eczema, especially herpes zoster, with a solution of nitrate of silver 10 grains to the ounce applied locally with a camel's-hair brush and Fowler's solution internally, with quinin and iron, now the internal treatment ought to be the same

I might go on through the few remaining diseases left to the general practitioner, but I throw out these few aphorisms to show that the teachings, the study, the practice and the success of the older members should not be too much disregarded, and to point out to the younger members the danger to their patients and themselves, especially the danger of too much experimentation and in hastily using the innumerable new remedies brought to our notice by the journals, and advertising mediums of the manufacturers and others who seek to get rich by the endorsement of honest and honorable members of the profession I believe in progress and I believe today that the medical profession is doing more to alleviate suffering, to lengthen the days of man, to stop the progress of disease, to avert epidemics and to make man's destiny brighter, happier and healthier, than all the other professions or forces of human organization combined I would like to have alluded to the admirable sanitary laws and organizations compared with a quarter of a century ago, and to the relegation of epidemics to ancient history, but time will not permit.

Dr Charles Young read a "Report on the Progress in Surgery," a résumé of the various matters that had appeared in the journals during the past year

"Progress in Diseases of the Throat and Nose and in Eye and Ear Diseases," was reported on by title

Dr Fayette Smith read a report on certain diseases Operations for laryngeal cancer had resulted in most excellent results Adenoir growths claim much attention and have been found the cause of much trouble, as for instance in cases of inability to talk from infancy, these were found to be the cause and great good was obtained by their removal In one instance of examination of the pupils of a deaf and dumb institution, 69 per cent. were found to be so afflicted This is not accidental, there must be a causal relation here Instances were mentioned where, by operation, in three months the hearing was improved and a week later talk began, and there was a steady improvement in speech and intellect. It is important that such examinations should be made early to gain all the benefit from the operation In ozena, diphtheritic antitoxin had been used and it was claimed to be powerfully instrumental in the cure It demands the continuation of this plan There is some risk and inconvenience, but it should be demanded In rhinology there has been little improvement; nasal surgery with its improvements on nature should not be thought of The best authors insist that milder measures are preferable Eucain is now established as a safe and satisfactory remedy or anesthetic in the throat and nose There is no danger as with cocain, especially of inebriety, a 4 per cent. solution should be used for examinations, 10 per cent for operations In operations on the eye and ear there is more improvement in the technique than in books or instruments

Dr B Meade Bolton read a

REPORT ON PROGRESS IN BACTERIOLOGY

There appeared to be progress in the study of diphtheria, as there was a continual reduction in the mortality since the use of antitoxin The serum should be the most potent that can be obtained Much appears to depend upon the article employed In tuberculosis the sputum taken early in the morning should be used for a test The danger from sputum is because it is thrown into the air and thus diffused All do not agree as to finding the bacilli in butter Bovine tuberculosis is the same as that of man Typhoid fever shows no improvement in the tests, etc , save the use of Widal's test In bubonic plague we now have cures up to 95 per cent

(*To be continued*)

PRACTICAL NOTES

Potassium Iodid in Actinomycosis has not fulfilled the expectations with which it was greeted Poncet has found it entirely ineffective in eighteen out of twenty five cases Sixty were cured, out of eighty recent simple cases, but the iodid was only supplementary to an operation, which is in fact its chief indication In visceral manifestations the iodid is only useful in the earliest stages Simple incision and thermocauterization will often suffice to arrest the affection —*Semaine Méd* , May 14

Subcutaneous Injections of Phenic Acid were found very effective by Skultecki in two cases of severe erysipelas and one of septic puerperal fever, all recovered promptly and he recommends the treatment as strongly as it has already been lauded for tetanus and anthrax The erysipelas patients received seventy two to eighty four injections, a total of 1 gram 44 to 1 gram 68 phenic acid, in a 2 per cent. solution, 1 c c every four hours The puerperal fever was treated with four centigrams of phenic acid every three hours, the first day, and afterward with three centigrams every four hours, for a week, when the cure was complete.—*Semaine Méd* , May 25

To Avoid Vesical Complication —In both men and women, in the healthy state, the urethra in a certain number of cases contains pathogenic bacteria This is naturally far more common in women In cases of surgery about the pelvis or rectum, in which catheterization is likely to be needed, the first indication, next to a sterile catheter, is to begin, before the operation, the administration of remedies to make the urine bland and non irritating Where this is a routine practice, bladder complications are of great rarity —*Int Journal of Surgery*

Eight Hundred Children Treated with Physiologic Horse Serum —Solares reports most gratifying success in anemia, chlorosis, chorea, incontinence of urine, scrofula, adenitis, neurasthenia and during convalescence from all diseases, from the administration of physiologic serum from healthy horses, which he has been practicing at the Children's Hospital at Barcelona since June, 1895 He recommends it as a strengthening, stimulating tonic, effective and harmless The occasional slight, transient, secondary effects observed were similar to those that follow injections of antitoxin, and probably are due to the same causes. The nutritive processes are powerfully promoted and the nervous system stimulated, but he ascribes its chief tonic properties to the globulins or spermins in serum which accelerate the intra organic oxidations.—*Revista de Anat. Pat. y Clin.*, April 1.

Puerperal Septicemia Cured with Injections of Sublimate.—Patient 32 years old, placenta previa, hemorrhage and artificial delivery as seven months. Six previous normal deliveries. She received in six days fifteen injections, a total of 0.12 gram sublimate, supplemented by alcohol, quinin, digitalis, ice internally and externally, and permanent irrigation of the uterus with a 1 per thousand sublimate and 3 per cent. phenol solution. Recovery in two weeks. Montini and Perrego, who report the case in the *Gazz. d. Osp. e d. Clin.*, April 3, recommended the sublimate treatment as simple, safe and effective.

Easy Method of Making a Plaster Cast.—A couple of pieces of thin, coarse flannel are dipped in water and spread on a table. The dry plaster is then sprinkled over one of them until it absorbs the moisture and forms a paste which is then smoothed with the hand and worked into the meshes, adding plaster as long as there is moisture to dampen it. The second piece of flannel is then placed on top of it and the same process repeated, when the cast is ready to apply. If a very stiff cast is required a third piece of flannel can be added in the same way. To make it fit over an uneven surface slits can be cut in the flannels, not facing each other. The cast is extremely light and can be folded, removed and fitted closer without breaking. Turpentine or lime water can be used instead of common water if preferred.—*Revista de Ciencias Méd. de Barcelona*, Oct. 10, 1897.

Water Treatment of Children's Diarrhea.—To remove the cause as rapidly as possible, Mongour first purges and then has the child drink sterilized water, as much as three to four hundred grams a day, with no medication. Vomiting ceases at once, and recovery is complete by the second or third day. Except for those in a moribund condition, all his cases have been cured: 13 hospital, 12 dispensary and 27 in his private practice. Larger has used for several years Vichy water, 2 to 5 liters a day, to counteract the acidity to which he ascribes the trouble. Water treatment prevents the tissues from drying up, and acts like a tonic in much the same way as artificial serum.—*Bulletin Médical*, 20–24.

Antipyrin in the Treatment of Fat Diabetes is the most effective of all remedies, according to the experience of Professor Lemoine. He gives half a gram each of antipyrin and lithium benzoate in a glass of alkaline water three times a day for a fortnight, in cases showing symptoms of intoxication and hepatic insufficiency with diminished secretion of urine and elimination of urea and the characteristic odor of apples in the breath, which warns of impending coma. When the symptoms of intoxication have passed away, he administers 2 to 3 grams of antipyrin in three doses during the day, always in the alkaline water, and 1 gram of lithium carbonate or benzoate twice a day between meals, keeping up the maximum dose of antipyrin for a week and then reducing to 1.5 gram for another week. The treatment is then suspended for a week and resumed for another fortnight, which usually abolishes the last trace of glycosuria. He confirms the cure by administering half a gram each of lithium carbonate and benzoate in alkaline water twice a day half an hour before breakfast and supper, continued for a fortnight every month. If nervous symptoms predominate, he gives only 1.5 to 2 grams antipyrin a day, supplementing it with a tablespoon of the following in a bowl of milk or any unsweetened beverage, an hour before bedtime: Potassium bromid, 40 grams, sodium phosphate, 10 grams, water, 300 grams.—*Semaine Méd.*, May 25.

Blindness in Spain.—One of the principal impressions produced on those who attended the recent Hygienic Congress in Spain was the large number of blind persons, not only among the beggars, but in all circles, even at the general sessions of the Congress. Hirschberg states that there is not a single professor of ophthalmology in the country, nor any public institution for affections of the eyes, which are treated in the public hospitals or small private institutions. "Owing to their blind fatalism they allow the affection to reach a stage beyond all cure, with no effort to check it, except possibly praying to Saint Lucia." Camuset remarks that in 300 cases which he examined, there were only three or four that were caused by amaurosis, the rest proceeded from neglect during infancy or from granulous inflammation. Six institutions have been founded, but their founders have retired or died and the institutions have lapsed. Hirschberg observes that he never saw so many shriveled eyeballs anywhere, not even in Egypt. The percentage of the blind is larger in the southern provinces. He mentions a street band of nine blind men and also that the custodian of the watch tower at Cadiz, famous for its magnificent view, was almost totally blind. His only reply to Hirschberg's questions was, "One must be patient."—*Deutsche Med. Woch.*, June 9.

The Schleich Method of General Anesthesia.—Time and experience are confirming the value of the method of general narcosis proposed by C. L. Schleich of Berlin, at the German Congress of Surgery in 1895, which is based on the logical principle that a narcotic substance inhaled is taken up more readily into the circulation and is then eliminated in the exhaled breath the more rapidly and completely, in proportion as the point at which it boils or vaporizes approaches or coincides with the body temperature of the inhaler. A non vaporized narcotic, such as chloroform, whose boiling point is at 65 degrees C., is absorbed less readily, requiring a larger amount, is retained in the system more, and the task of eliminating it does not devolve upon the proper organ, the lungs, but upon the other parenchymatous organs, especially the liver, which explains the alterations in these organs after death from chloroform. If, on the other hand, a narcotic with a very low boiling point is administered, such as ether (boiling point at 34 degrees C.) the vaporization is so intense at the temperature of the body that it interferes with the respiration, hinders or prevents the dissociation of the respiratory gases producing cyanosis, retention of the carbon dioxid, which is under less pressure than the super vaporized ether, and also stretching and tearing the epithelium of the alveoles, leading to secondary pneumonic infiltration. He therefore proposed a triple combination whose boiling or "vaporizing maximum" is identical with the temperature of the body, petroleum ether or benzin (with an established boiling point at 60 to 65 degrees C.), sulphuric ether and chloroform, varying the amount of each in proportion to the rapidity of elimination desired, to secure a higher or lower boiling point. Formula 1. For brief operations. The boiling point, 38 degrees C., coincides with the internal temperature of the body. Chloroform, 15 parts, petroleum ether, 5, sulphuric ether, 60. Formula 2. For operations requiring a little more time. Boiling point 40 degrees C. Chloroform, 15, petroleum ether, 5, sulphuric ether, 50. Formula 3. For major operations. Boiling point 42 degrees C. Chloroform, 30, petroleum ether, 5, sulphuric ether, 80. It is administered with a mask. The sleep induced is prompt and tranquil, resembling more the hypnotic sleep than ether or chloroform narcosis. There is no cyanosis, salivation nor accumulation of mucus nor consecutive pneumonia. There are no counter indications if the lungs are working normally. It has been said, "he has deprived anesthesia of all its dangers." Meyer and Weidig consider even the small proportion of free ether in his formulæ a slight menace, and prefer a solution with the chloroform and ether in molecular combination, which requires petroleum ether with a little lower boiling point.

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SATURDAY, JULY 23, 1898

TUBERCULOSIS OF THE MAMMARY GLAND

Tuberculosis of the mammary gland has heretofore been looked upon as a rare affection The recent simultaneous reports of four cases of this disease in American medical journals, two by FERGUSON[1] and one by FREIBERG[2] in this JOURNAL, indicate that the affection may not be as rare as ordinarily supposed The most extensive of these recent articles upon this subject is that of SCUDDER[3] After making a careful search of the literature he found that there are but eighty instances of tuberculosis of the breast recorded, and twenty three of these eighty cases lack positive evidence of being tuberculous

The methods of infection may be enumerated as follows In primary mammary tuberculosis the bacillus may find its way into the organ through the milk ducts, or through an open wound in the nipple, as in DEMMES'[4] case or in the skin Secondary tuberculosis is the most common form Here the bacillus enters the breast through the blood or through the lymph from foci in some near or distant part of the body The disease may also arise through extending by contiguity of structure, as from tuberculosis of the rib or sternum, tuberculosis of the pleura, axillary or other neighboring lymphatic glands

The majority of all the cases were found by SCUDDER to be thirty-five years old or younger Mammary tuberculosis occurs, therefore, in comparatively young adults, that is to say, during the period of functional activity of the gland In about one-half of the cases the women had borne children Lactation was active during the development of the tubercular disease only a few times It appears that in the tuberculous puerperal cases there is a greater frequency of suppurative mastitis than in the normal puerperal case, and it would seem that infection with tubercle bacilli would find more favorable soil in a breast once the seat of inflammation It is an interesting fact to note in passing, that of these eighty cases only six occurred in men

Among the symptoms, especial mention should be laid upon the fact that in about one half the cases pain in the breast is mentioned as an early and constant sign In many cases the patients have sought relief, not so much for the swelling or for the discharging fistulæ that may be present, as for the persistent pain in the breast In a few cases the nipple was retracted

The process may show itself in various forms, from a single small nodule or many nodules scattered throughout the breast, to hard irregular masses of varying size, situated in the center or in some segment of the gland The masses may be movable or fixed In the majority of the cases the process was slow in its progress, occupying months and years in its course from the time it was first noticed to the time that the disease was examined by a medical man In SCUDDER'S case the duration of the disease was five years In nearly all the cases the axillary glands presented different stages of tuberculosis In a considerable number of cases (twenty-nine) tubercle bacilli have been found either in the tissues or in the pus from the abscess

As regards the diagnosis it will serve the present purpose to state, that tuberculosis of the breast may be confounded with practically every other disease of this organ which may give rise to swelling Among these conditions are carcinoma and sarcoma, benign tumors, cysts, syphilitic gumma, and actinomycosis The comparative ease with which a diagnosis of tuberculosis can be reached by means of bacteriologic examination and inoculation experiments does not necessitate a detailed description of the various other points in the differential diagnosis

As regards treatment the only thorough method is complete removal of the disease, including the whole breast and all the contents of the axilla The old method of curetting tuberculous abscesses and chronic fistulæ of the breast is not to be depended upon Radical excision of all diseased tissues, with a wide margin, should be practiced, because tuberculosis may extend further into the surrounding tissues than can be seen with the naked eye Constitutional and climatic treatment should not be neglected, and the relation of mammary gland tuberculc [illegible] the mother to tuberculosis in the [illegible]ng sh[illegible] be borne in mind by [illegible]

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[1] This Journal June 11 1898
[2] This Journal June 25, 1898
[3] American Journal of Medical Sciences, July 1898
[4] Quoted by Scudder loc cit

WHAT ARE THE SYMPTOMS OF NEPHRITIS?

A few years ago, when the microscope first began to clear up the mists which pervaded medicine, and when the excretions of the body received attention due them, many observers were not slow in finding in the sediment of the urine bodies which were denominated casts Some observers went further than this, and a few years ago it was thought possible to differentiate the different varieties of nephritis by the kind of cast found in the urine, attributing the hyalin cast to the interstitial variety and the granular to the parenchymatous But even before this time the urine had received attention, and albumin had been demonstrated by chemic methods Clinical experience had told them of the pallor of the skin, of the hardened arteries and of the edema which was sometimes present

Combining these facts obtained by clinical experience with the occurrence of albumin and casts in the urine it was thought that to make a diagnosis of nephritis was comparatively easy

But anemia, high arterial tension and edema may be present in other conditions than nephritis, so they only form concomitant symptoms and the diagnosis hinges upon the amount of urine excreted and the presence of albumin and casts in the urine

When albumin and casts were found in the urine it was thought that this indicated a pathologic condition of the kidneys, but this teaching is gradually being restricted, while some writers have not only given up the idea of making a differentiation of the varieties of nephritis by the kind of casts found, but claim that both albumin and casts are found, even though nephritis be not present The combination method of Professor HAINES (*vide* JOURNAL, vol xxx, p 234), for example, will detect casts in urine normal to coarser tests Clearly some one is wrong and it is due the profession to adopt some *symptom-complex* which will settle the question once for all

It may be that in order to detect albumin some writers have used tests which are extremely delicate, so much so that the faintest trace may be found, while others rely upon the heat and nitric acid test, which is reliable enough for all practical purposes, and why should it be discarded for others which may throw a cloud about the final diagnosis? If casts are found in the urine in health why should we make a diagnosis of diseased kidney when they are present? Now if different varieties of casts are found in all cases of nephritis how can we say that the one is interstitial and the other parenchymatous?

It looks as though the clinical symptoms as observed by the naked eye are taking precedence over the results obtained by microscopic evidence, and clearly there is a fault somewhere Why not let us say that if albumin is present by some standard test, it indicates nephritis, or if a certain prevailing variety of cast or some other body is found, it indicates the variety of nephritis? Evidence should not be very hard to obtain and is the duty of those who can do so to set this matter at rest

EUTHANASIA FOR CONDEMNED CRIMINALS

In the various countries at different times, diverse methods of inflicting death upon criminals condemned to die have been in vogue for greater or less periods of time The cruelties of prolonged torture of barbaric days were succeeded by methods at once more rapid and necessarily less painful Crucifixion with its hours of agony was supplanted by the headman's axe The guillotine of France, the very name of which caused a shudder to run through civilized Europe, was decidedly less brutal than the cord Humanitarians in general and many physicians are opposed to hanging as a way of inflicting capital punishment If one were sure that the neck would always be broken in the drop, there would be some commendable features connected with it, but the sickening struggles of three, four, even five minutes before the attending medical man pronounces life extinct, can not but make one feel that their sufferings are needless and cruel, no matter what their crime may have been The gaping interest of curiosity seekers in those States where the execution is public, for the great numbers attending hangings, when they can get in, attest more forcibly than words that they derive some sort of entertainment from the spectacle, tends to degrade such persons to as low a level as the central figure of the scene The latest substitute for hanging, electrocution, has not proved the unqualified success its promulgators had hoped Death has but in few instances been instantaneous, and many cases stand before us of much longer periods of time used in the completion of the process than has been the case in hanging by strangulation This delay in a majority of trials has been due to some defect in the apparatus or the interposition of some non-conductor to the electrical current To be sure execution by this method is done in a comparatively speaking scientific manner, and is robbed of many of the horrors of the hanging, especially the morbid crowd of bystanders, but nevertheless some other method equally "scientific" should be substituted The beheading with the axe would hardly suffer in comparison with this twentieth century brutality

At the recent meeting of the Ohio State Medical Society at Columbus, one of the essayists offered in a serio-comic paper, a substitute for hanging and for electrocution, no less than causing dissolution by means of inhalations of chloroform pushed rapidly beyond safety, as indicated by pulse, respirations and pupils The only objection the essayist could find to the scheme was that the victims would slip their moorings from this earth with thoughts far too pleasant for their hardened minds This happy condition of affairs however, depends greatly upon the person giving and the one receiving the anesthetic One who has given anesthetics to any extent, knows how difficult the patient is to manage in the first stage His struggles may become so great that four or five strong men may be needed to hold him on the table We also know that in some cases, continuous saturation of the mask with chloroform is barely sufficient to keep them under, the chloroform apparently having little more effect than so much water, the very next case may be anesthetized easily and promptly, showing that the fault lies not with the chloroform, but in the individual peculiarity of the patient It is needless to say that it might be rather difficult at times to encompass death in the former instance Another point, it is against the law of many States for any one to administer an anesthetic except a regularly qualified physician What physician would be willing to sacrifice himself to the rôle of public executioner? What would become of the practice of such a parasite? A doctor's profession requires him to save life, not take it He would become so used to death under anesthesia that fatal results would come where he little wished them To be sure the law might be amended to create the office of non-professional chloroform-executioner But until incumbents of such offices received considerable training, the beneficent result of an easy, dreamy death as suggested by the essayist would not be forthcoming, for gradual perfect anesthesia is difficult enough in the most skilled hands How would it look to have the catalogues of our medical colleges embellished with a heading something like the following "Special Courses given to those who wish to enter the Public Service as Chloroform Executioner Not necessary to take a course in Medicine "

The remarks of a member of the laity in regard to chloroform anesthesia would perhaps not be out of place (Mrs King in the Nineteenth Century for March) She had taken chloroform twice in England and oftener in India In the latter country the anesthetic was given gradually with plenty of air under the rules as laid down by the Hyderabad commission, and she had never experienced any but the most pleasant sensations In England, on the other hand, although she was anesthetized by one of the most skilled chloroformists in London, so little air was allowed her that she experienced all the horrors of impending suffocation, and thinks she would have perished had not her heart and lungs been physically sound

Though the author of the above mentioned article, read at the State society, was not altogether serious in his remarks, nevertheless his subject excited considerable attention, as it is bound to do among all thoughtful persons both in and out of the profession Substitutes other than chloroform were offered, but none that practice would be likely to prove always efficient, ever ready, painless Perhaps one of the best was that the judge should sentence that the condemned man disappear from the eyes of his fellow men on such a day, and that an officer of the court be a witness of the fact and give evidence to that effect, a little hydrocyanic acid in the food and all is over The terrible uncertainty of the condemned as to his ultimate fate, and the horror excited in the public mind at the very idea of poisoning would be the main difficulties to this scheme The subject is one of importance to medical men, and it is to be hoped that it will be followed up at other meetings and something evolved which could receive the sanction of physicians generally, and by legislation prevent in time the needless barbarity of the present in the punishment of capital crime

THE HYGIENE OF MUSIC

A witty popular writer makes the suggestion that with the growth of utilitarian ideals, music will gradually come to be looked upon, not as a dignified and civilizing art, but as a sort of minor vice, an amiable but enervating dissipation While there is probably little chance that our ideals will become so completely utilitarian as he suggests, there is nevertheless something in the idea he advances that is perhaps worthy of consideration It is certainly a curious fact that one form of sensual indulgence, or perhaps one might say more acceptably, sensuous enjoyment, and that as little utilitarian as any, if not absolutely of no value to the race and its continuance, should be lauded as in every way meritorious, even when excessive, while others of far greater real utility are considered, if at all overdone, as hardly respectable, if not absolutely disreputable This is not because of its intellectual element, for it has as little of that as any form of sensory gratification, it is of itself free enough from any appeal to the intellect to meet the fullest demands of those critics who consider any excitation of the imagination as incompatible with true art It appeals solely to the emotional and physical sides of our nature and it is a not unreasonable query whether, in so acting, its effects are always and in every way beneficial or desirable

So much has been said of the therapeutic and generally salutary effects of music, its better side has been so industriously exploited, that it seems unnatural to most individuals to even suggest that it has in it any element of evil, any pathologic possibilities It is nevertheless true that it has such, and that they are serious enough to be worthy of careful attention It is not hard to see how and why this can be so if we consider the theories of the origin of music as given by those whose opinions are best worthy of respect Darwin's idea that it originates in the sexual impulse and is analogous to the love notes of song birds, is in itself suggestive of such possibilities, and the same is true of that of [illegible] NCER, [illegible] believes that it originated [illegible] cad of speech. WEISMANN has argued that music is a secondary effect on the organs of hearing induced by cultivation, and not in the regular order of nature, in other words, that it is abnormal, hence the ready deduction that it may be related to or give rise to various abnormal and undesirable effects. If we accept it, on the other hand, with WALLASCHEK, as satisfying a rhythmic impulse in our constitution, this really only accounts for one element in music, and that may itself have under some circumstances a morbid as well as a normal effect, and leaves all the others that have been built up upon it to be accounted for, with all their possibilities of good or evil. Taking it as we will and assuming whatever physiologic or other origin for music, there is nothing in it more than a gratification of the senses and an incitation of the feelings. It may be of service as an adjunct to intellectual excitation of the higher emotions as in religious music, it may of itself be soothing in certain conditions of morbid excitement, but it may also be the reverse. The modern classic music and the Wagnerian "music of the future," the degenerative tendencies of which have been so vividly depicted by NORDAU, are harder to justify as beneficial than is the simpler and more melodious music that appeals to the uneducated ear. It is hard, in fact, to see anything but a sort of intoxication in the mental state of some of the musical enthusiasts who go wild over WAGNER'S music, if we can interpret their ideas by the language they employ. It suggests at least a perversion of a sense, a morbid unnatural enjoyment.

Music in itself is not intellectual, its faculty is quite compatible with a profound degree of dementia, as is often shown in asylums and such musical prodigies as Blind Tom, but as an adjunct to poetry in song it often becomes so associated with ideas that we make the mistake of thinking it conveys them itself. As a stirrer of the purely unintellectual emotions it has no rival, and in these two ways lie its possibilities of mischief. Poetry itself is like music in that it appeals to the rhythmic impulse, but it also appeals to the intellect, and not merely to the emotions. Its unhygienic possibilities have long been recognized. One of the greatest poets has said that to appreciate poetry, a trace of morbid mentality was essential, and that this was still more the case to originate it. When music and poetry are combined as is commonly the case the appeal to the emotions is even stronger in many instances, and music without words is, from this common association, most often directly suggestive of ideas that may or may not be healthful.

The actual evil effects of music are less easy to trace because they are generally combined with other causes that get the credit of all the evil. One of the most eminent of English gynecologists has, however, protested strongly against the common practice of musical training of girls as especially disastrous in its consequences, and similar testimony might be obtained in other quarters. Music has been credited with the production of apoplexy and other nervous affections and is a recognized cause of insanity, though probably to a less extent than is really the case. It is easy to see how its excessive cultivation may be disastrous to hysteric and emotional individuals, and still more often to those who have any decided mental taint.

Music certainly adds much to the enjoyment of life, but it is not a virtue in itself and good as it is, it is liable to be overused and abused. Its hygienic requirements have received too little attention and its pathologic possibilities have been largely ignored. It has its uses in therapeutics, but they hardly outbalance the dangers of its overcultivation, which are real enough even with the simpler music of the past. What they will be with the "music of the future" is as yet an unsolved problem.

THE WAR NEWS OF THE WEEK

Public interest during the week ending July 16 centered in the surrender of Santiago, Cuba, and the outbreak of yellow fever among the troops investing the city. According to some of the dispatches the infection was brought to El Caney and Siboney by the many thousands of Spanish and Cuban refugees from Santiago, but inasmuch as General MILES considered it advisable to destroy all the buildings at Siboney by fire, it seems evident that this place must have been regarded by his medical officers as a focus of infection. Cases of fever were reported from the time of the first landing of the troops, but these were typhoid and malarial cases, with febrile conditions due to great fatigues and exposures alternately to excessive heat and to the chill of sleeping in wet clothes in the trenches. Ultimately, however, certain cases among men of the Quartermaster's Department, who had been most in contact with the refugees, were recognized as veritable cases of yellow fever, and immediate steps were taken to isolate the cases and prevent the extension of the infection to the troops on the line. On the first notice of the outbreak a large force of immune medical men and nurses, who had been held by Surgeon-General STERNBERG in readiness at Tampa, Florida, for a possibility of the kind, was immediately dispatched to General SHAFTER'S command. Meanwhile the reports from the front were discouraging. A special cable dispatch from Siboney to the *Washington Star*, July 14, represented Dr. NICHOLAS SENN as of opinion that in two weeks 25 per cent. of the troops would be *hors de combat*, the sanitary conditions being the worst he had ever seen. Dr. GUITÉRAS, also, was represented as being discouraged. "There are two hundred fever cases here," said this Siboney dispatch, "the majority from the trenches where men sleep night after night in water." The El Caney situation was reported as grave. "There are many cases of fever and great mortality among the people, who are dying from exposure and privation." Santiago was represented in all the dispatches as in a most insanitary condition with many of the Spanish troops suffering from fever But official dispatches from Colonel GREENLEAF, Chief Surgeon on the Staff of General MILES do not sustain this exaggerated view of the outbreak On July 16, his statement was "Only 23 new cases of yellow fever and 3 deaths reported in the last 24 hours, general type of the disease mild, camp sites moved whenever practicable, have taken vigorous sanitary precautions to check the spread of the disease" And on July 16 "Only 16 new cases and 1 death" This is a very grave condition of affairs, but now that the surrender has taken place the troops are in a position to devote the whole of their energies to their protection from infection The high grounds back of the city are represented as affording dry and well drained camp sites with pure water supplies from mountain streams and the heat tempered by breezes from the sea Prompt removal of an infected individual to the hospital and prompt removal of a command from an evidently infected camp will, it is hoped, suppress the disease and enable the regiments in a short time to be embarked in as perfect freedom from infection as from a detention station on our own shores

To meet the possibilities of the future, however, Surgeon General STERNBERG spent some days in New York making arrangements for further strengthening the immune hospital force and providing it with all necessary supplies On July 16 the Naval Ambulance Ship *Solace* and the transport *Olivette* arrived from Santiago, the former landing sick and wounded soldiers at the General Hospital, Fortress Monroe, Va, and sick and wounded Spanish prisoners at the Naval Hospital, Norfolk, Va, while the latter, carrying 250 wounded men, was detained off the Quarantine Station at the port of New York by Dr DOTY, Health Officer, pending an inspection of the condition of the men and the vessel In this connection, also, the press reports of the terrible conditions existing on the steamer *Harvard*, which brought 1000 prisoners to Portsmouth, are said to have given rise to the keenest apprehension in the Navy Department, but should it be found that yellow fever exists among these prisoners, there ought to be no difficulty in managing it on the New England coast

Meantime the camps in this country appear to show a decided increase in the prevalence of typhoid fever Lieutenant Colonel SMART was called upon to make a careful inspection into, and report upon, the sanitary condition of Camp Alger, Va, giving special attention to the water supply and to the etiology of cases of typhoid fever occurring in that camp, and to Deputy Surgeon-General WOODHULL was assigned the duty of making a similar investigation at Chickamauga Park, Ga, while Major P R EGAN has been endeavoring to determine the conditions conducive to the prevalence of typhoid fever in the Fourth Army Corps at Tampa, Fla This activity and earnestness on the part of the Medical Department will tend to restrict the ravages of this indigenous camp disease which, although attracting much public attention, is by no means so prevalent as it was in the camps of the early months of the Civil War, July and August, 1861

TAXING ANTITOXIN

There is a seeming tendency on the part of certain internal revenue officers to insist that antitoxin comes under the category of the remedies affected by the stamp tax It is difficult to see how this conclusion can be drawn from the terms and definitions of the recently passed internal revenue law It is neither a copyrighted remedy (having been presented free, in accordance with the high ethic instinct of the medical profession, to suffering humanity), nor is it a secret preparation put up by pharmacists to resemble copyrighted preparations Under no construction of the law can it be brought into the category of the class of preparations which congress intended to tax, that is, preparations prepared according to a secret formula guarded by copyright or otherwise for the benefit of corporations of individuals It is possible, however, that the revenue officers have confounded the antistreptococcic and antidiphtheritic serums with a British proprietary preparation which may fall within the category of the law, but is a totally different preparation The discussion in congress on this branch of the revenue law clearly showed the legislative intent so far as the taxation of proprietary preparations was concerned To tax antitoxin in the way proposed would violate not merely the spirit but actual text of the internal revenue act It will probably be sufficient to indicate these facts to internal revenue officers to avoid such taxation

CORRESPONDENCE

Ether Vapor as a Diagnostic Agent

PEORIA, ILL, July 11, 1898

To the Editor —About a year ago I began experimenting with ether as a means of diagnosis of intestinal perforations, and concluded that it would be much more practical and better than hydrogen gas, as advocated by Professor Senn, since it is always at hand and necessitates no special apparatus, aside from what is already found in the surgeon's possession, and further, no objections can be given to its use on account of noxious properties, unfounded as these objections may be as to the hydrogen gas The quantity of ether being infinitesimal (ʒi or less being sufficient to give up the necessary vapor, which is diluted many, many times by the air that carries it) absolute freedom from anesthesia is assured The method is simple A small quantity of ether is poured into the bottle accompanying the aspirator of so called French pattern A soft rubber catheter, or rectal tube (preferably a long glass douche tube connected by rubber tubing), is jointed to one of the pipes [illegible] bottle [illegible] ir pump is joined to the othe[illegible] [illegible] omes mixed with [illegible] canal, the rectal tube being inserted as far as necessary This mixture, which may be called ether air, rapidly finds its way through the coils of intestines, giving forth strong rumblings as it progresses onward, causing distension on entering the stomach, from whence it is belched, provided no perforation exists along its pathway Upon reaching a perforation, however, the ether air escapes into the peritoneal cavity, tympanites more rapidly develops, and upon dilating the wound entrance down to the peritoneum quickly comes out into the world, being at once recognized by its odor and the hissing sound of escaping gas Upon opening the abdomen the distension of the intestine from the rectum up can be followed to the point of injury where the same odor and hissing are noted and the wound repaired Continuing the search till no more ether air is found escaping from the intestines we may rely upon its efficacy

Case 1 —Dog, thirty pounds, shot through abdomen The rectal tube was inserted and ether air forced in A rumbling along the colon could be followed to the small intestines when tympanites rapidly developed (dog was stimulated by the ether to renewed but weak struggles, although the first shot fired was too high, piercing the heart, the second shot taking effect antero posteriorly at the middle of the abdomen) At the wound entrance, skin only being enlarged, ether air escaped quickly with a hissing noise, proving the existence of perforation The abdomen was opened and three through and through perforations of the small intestines found and four others with only one portion of the gut pierced, each perforation giving out ether air as the proximal perforations were closed

Case 2 —Dog, forty pounds, shot in abdomen A tube was placed in the stomach and the stomach rapidly dilated and the vapor passed a short distance Tympanities developed rapidly The abdomen was opened and perforation quickly found in the duodenum

It might be urged that the rectal administration of such a powerful anesthetic would be fraught with serious dangers, but the quantity of ether is so very small that the small amount of ether vapor given off from it is insignificant in effects, aside from those decidedly beneficial, stimulating the dying to renewed struggles and soothing the system preparatory to treatment

Case 3 —Live puppy, three pounds Ether air was forced through the rectum and out the mouth continuously for an hour No effects were produced aside from a sense of fullness and seeming happy satisfaction with the overloaded alimentary canal This process could have continued for unlimited time, but one hour and no anesthetic effects satisfied us there would be none EMERSON M. SUTTON, M D

Precocious Pregnancy

CLEVELAND, OHIO, July 16, 1898

To the Editor —The letters in the last number of the JOURNAL, on "Precocious Pregnancy," remind me of a case that I saw a couple of years ago Through the courtesy of my friends, Dr and Mrs Lukens, I learned the personal history of the case The girl menstruated first at the age of 11 years and three months She immediately became pregnant and was delivered at full term by a rather tedious delivery, although otherwise normal, of a large, well developed child Both mother and child did well The father, at the birth of the baby, was just 14 years old Sincerely yours

N STONE SCOTT, M D

Alcohol Injections in Hodgkin's Disease, Etc

ST LOUIS, MO, July 13, 1898

To the Editor —The undersigned is preparing a paper on his experience with injection of alcohol in cases of Hodgkin's disease and cancer of the stomach and for the present will only say that the results thus far have been very encouraging In due time he will send you a full report for publication

Respectfully, A F BOOK, M.D

Reply to Professor Klebs

CHICAGO, July 19, 1898

To the Editor —The following is the reply I wish to make to Professor Klebs' letter beginning "In consequence of the surprising declaration of Dr Murphy that tuberculosis of the lungs can be cured, etc"

Professor Klebs has never seen my article, therefore he knows neither my conclusions nor the work on which I base those conclusions, therefore, his letter has no scientific value in connection with my paper The paper is now appearing in the JOURNAL I trust that those who have read Professor Klebs' letter will read the paper most carefully

Very respectfully, J B MURPHY, M D

BOOK NOTICES

The Extra Pharmacopeia Revised in accordance with the "British Pharmacopeia" in 1898 By WILLIAM MARTINDALE, F L S, F C S Serotherapy, Organotherapy, Medical References and the Therapeutic Index By W WYNN WESCOTT, M B Ninth Edition Price 10s 6d

It must be a sad sight to those writers in this country who have always opposed the decimal system to find that British Pharmacopeia now adopts a dual spstem of weights and measures in all its formulæ except those employed in testing The British Pharmacopeia states "The alternative employment in the British Pharmacopeias of 1867 and 1885 of metric weights and measures in the paragraph relating to volumetric analysis is not extended to every official paragraph which makes reference to the usual Imperial weights and measures but the metric system alone is employed in all paragraphs relating to analysis whether the gravimetric or volumetric During the period of transition from the Imperial to the Metric system a certain amount of confusion is likely to occur"

The editor of this work, Dr Martindale, says, "To aid the transition, therefore, and to avoid confusion as much as possible we have in a measure followed the commendable precedent of the first official German Pharmacopeia, and of the United States Pharmacopeia of 1883 In either of these with few exceptions parts by weights were employed

"We have further given in the body of the work the approximate doses of each drug and preparation in terms of the metric system In further trying to think in the metric system, prescribers may consider the English grain as 65 milligrams (0 065 grams) and 1½ grains as 10 centigrams and 18 minims as approximately 1 cubic centimeter Following the U S Pharmacopeia we have abbreviated the word gram to Gm and the words cubic centimeter to Cc The contraction gm being printed in heavier type and with a capital initial letter, and we recommended it to be written, will distinguish it from gr the usual contraction for grain We trust that our readers may soon be able to become familiar with the quantities and doses in terms of the metric system, which it is hoped will ere long supersede the old system Probably the greatest difficulty will be the introduction of conveniently sized medicine bottles to contain the metric equivalents of the household measures, teaspoonful and tablespoonful"

This work will be found very valuable, especially in regard to the therapeutic uses of the new remedies and the antitoxin

Transactions of the New York State Medical Association, for the year 1897 Vol xiv Cloth Pp 646 Published by the Association, New York City

This volume is edited for the Association by E D Ferguson M.D, and comprises thirty two papers by leading practitioners, also lists of officers, committees, Fellows, reports of the District Branches, the New York County Medical Associa tion, necrology and organizations affiliated with the State organization

Perhaps with the standards of literary and scientific excellence expected from this Association at the start, some of these contributions to the relief of bellicose New Yorkers might have been omitted Still the controversialists of both sides will have excellent entertainment in the lazy days of vacation Dr E H Squibb gives his "Brief Comments on the Materia Medica, Pharmacy and Therapeutics of the year ending October 1, 1897" Besides the classical address of the President, Dr Charles Phelps, there are valuable papers by the editor, Drs Douglas Ayers, Charles E Lockwood, J D Bryant, Parker Syms, Frederick S Dennis, Ely Van de Werker, A Palmer Dudley, Ira Van Giesen, George T Harrison and H D Didama The article on "Medical Expert Testimony," by Dr H O Jewett, is timely, and another by Dr Samuel W Smith, on 'Acute Catarrh of the Middle Ear as a Sequel of La Grippe," is more than suggestive Three active members, usually well represented by papers at nearly every meeting, have been removed by death, to wit, Drs Wm T Lusk, J Lewis Smith, and W H Robb Of the former, two memorial tributes have been added by Drs Austin Flint and John Shrady Much more in praise might be written, but future readers, as well as the affiliated State societies, may expect to be gainers in reprints, journal abstracts and attractively bound volumes The New York State Medical Association has a just conception of its duties and responsibilities

Cardiac Failure and Its Treatment, with especial reference to the Use of Baths and Exercise By ALEXANDER MORISON, M D, Edinburgh. Pp 256 London, The Rebman Publishing Company 1897

"It is the peculiar merit of those who are responsible for the attention now given to the balneologic and gymnastic treatment of chronic heart disease that they have extended into the domain of active therapeutics, and during the progress of cardiac failure, the roborant influences of that exercise which formerly and in greatest measures found its place in the period of convalescence"

It is well known to every practitioner that many cases of heart disease are apparently conducive to longevity, for they induce less carelessness of diet, regular habits of life and such exercise that the patient lives to a green old age, notwithstanding the existence of his affection Schott and others have held conclusively that the enfeebled heart may be strengthened in suitable cases by baths and gymnastics and skilfully administered exercise

This book enters fully into the details of this form of treatment. The illustrations are clear and fully illustrate the work The pathology of the affection is given from the standpoint of the modern physiologist. We recommend the book as being in every way satisfactory

Notes on Military Hygiene for Officers of the Line—A Syllabus of Lectures formerly delivered at the United States Infantry and Cavalry School, by ALFRED A WOODHULL, LL D, Lietenant Colonel, Medical Department, U S Army New edition, revised and augmented Pp 181 New York John Wiley & Sons London Chapman & Hall 1898

"These notes," says the author, "represent the essence of the lectures on military hygiene delivered to the class of 1889 at the Infantry and Cavalry School It was originally prepared for the convenience of the student officers, but it was afterwards thought that it might be acceptable to officers of the line generally The new edition changes the original edition to correspond with the present army regulations and the progress of sanitary science"

The volunteer officers, particularly of the Medical Department as well as the line, will find very much useful information in this work Indeed, it will be well nigh indispensable to those for the first time having the responsibility and care of troops

Atlas and Abstract of the Diseases of the Larynx—By Dr L GRUNWALD of Munich Authorized translation from the German and edited by Charles P Grayson, M D 107 colored figures on 44 plates Philadelphia W B Saunders 1898 Price $2 50 net

"This Atlas," says the translator, "exemplifies a happy blending of the didactic and clinical such as is scarcely to be found in any other volume on this subject with which we are acquainted It is upon the value of the clinical portion of the work that the editor would dwell with particular emphasis"

The beginner will find here a series of pathologic conditions illustrated with a remarkable fidelity to nature, "that it would require him a number of years to duplicate in actual practice, while the veteran, however rich his experience, will note a precision, a *finesse* in diagnosis that can not fail to be instructive, perhaps even inspiring"

Most of the illustrations were prepared by the academic painter, Mr Keilitz, from sketches or preparations by the author

The Methodist Episcopal Hospital Reports Volume i 1887–1897 By LEWIS STEPHEN PILCHER, M D, GLENTWORTH REEVE BUTLER, M D, New York Published by the Hospital in 1898

The book is divided into four parts, viz

Part I 1. Historical Notes, by John Storry Breckinridge, M D 2 The Building and the Administrative and the Medical Organization of the Hospital, by Eugene Allen Noble 3 List of the officers and others connected with the Hospital from its organization

Part II Surgical Reports This comprises various surgical essays, by Lewis Stephen Pilcher, M.D, George Ryerson Fowler, M D, James P Warbasse, M D, Thomas Bray Spence, M D, Charles Henry Goodrich, M D, Henry Goodwin Webster, M D, William Nathan Belcher, M D

Part III Medical Reports By Alexander Ross Matheson, M D, Glentworth Reeve Butler, M.D, William Nathan Belcher, M D, Ralph Melville Mead, M D, Frank Whitfield Shad, M D, Arthur Henry Bogart, M D, Charles Richard Butler, M.D, Henry Goodwin Webster, M.D, Raymond Clark, M.D, Henry Pelouse de Forest, M D

Part IV Pediatric Reports By John Biou Bogart, M D

The Hospital was opened for the reception of patients, Dec 15, 1887, and this report is a record of the decade of hospital work The book is handsomely printed

Atlas of Legal Medicine By Dr E VAN HOFMANN Authorized translation from the German, edited by FREDERICK PETERSON, M D, assisted by ALOYSIUS P J KELLY, M D Fifty six plates in colors and 193 illustrations in black Philadelphia W B Saunders, 1898 Price $3 50 net.

The illustrations in this work are original, having been prepared from recent cases or from museum specimens The volume is made up chiefly of photographs and drawings of various lesions and pathologic conditions taken from actual cases such as would take one many years to acquire unaided The illustrations cover suffocation, criminal malpractice, injuries of the brain, fracture of the skull, poisoning by mineral acids, arsenic, etc This reference atlas will be found invaluable

ASSOCIATION NEWS

Medical Colleges—The Permanent Secretary has issued the following circular

PHILADELPHIA, June 30, 1898

Dear Sir—At the recent meeting of this ASSOCIATION the following was unanimously adopted

WHEREAS the AMERICAN MEDICAL ASSOCIATION did, at Detroit in 1892, unanimously resolve to demand of all the medical colleges of the United States the adoption and observance of a standard of requirements of all candidates for the degree of doctor of medicine which [illegible] in [illegible] nner fall below the minimum standard of [illegible] Medical Colleges, and

WHEREAS, this demand was sent officially by Permanent Secretary to the deans of every medical college in the United States and to every medical journal in the United States, now therefore the AMERICAN MEDICAL ASSOCIATION gives notice that hereafter no professor or other teacher in, nor any graduate of any medical college in the United States, which shall after January 1, 1899, confer the degree of doctor of medicine or receive such degree on any conditions below the published standard of the Association of American Medical Colleges, shall be allowed to register as either delegate or permanent member of this ASSOCIATION

Resolved, that the Permanent Secretary shall within thirty days after this meeting send a certified copy of these resolutions to the dean of each medical college in the United States and to each medical journal in the United States

Respectfully yours,
WM B ATKINSON, Permanent Secretary

Please acknowledge receipt of these resolutions

The Columbus Meeting

COLUMBUS, OHIO, July 13, 1898

To the Editor —We have at once entered actively upon the preparation for entertaining our guests, the AMERICAN MEDICAL ASSOCIATION, in 1899, and can assure them we will leave nothing undone which can contribute to their comfort. Our hotels are as anxious as we are that the meeting shall be a grand success They offer the following rates and accommodations respectively, Great Southern, rates $2.50 to $400, American plan Chittenden, $2 50 to $4 00, American plan Neil, $2 50 to $3 00, American plan Park, $1 50 to $2.50, American plan Davidson, $2.50 per day, American plan. Hotel Goodale, 75 to $1 00 per day for room, European plan, first-class restaurant attached Smith's European, $1 00 to $1 50 per day per room, European plan, first class restaurant attached Normandie, $1 50 per day, American plan Norwich, $1 50 per day, American plan

In addition to these regular hotels, we have a large number of strictly first-class boarding houses where many guests can find economical and comfortable accommodations A careful canvass of the above hotels mentioned, assures us that they can comfortably accommodate 2500 guests, and with our other facilities we will have no trouble in comfortably entertaining all who will come

STARLING LOVING,
Chairman Committee of Arrangements

The Denver Meeting—Comments of the Medical Press

AND the same day it rained—and the next day—and the day after

The registration amounted to over 1,300, second, we believe, only to the semi centennial at Philadelphia, which it was hardly expected to excel The opening general session was marked by lively interest and good fellow feeling The remarks of Governor Adams, while amusing, were tinged with truth The address of Surgeon General Sternberg did not, of course, receive the same consideration as if he had delivered it in person But as the reader of the paper, Lieut Woodhull, remarked, the possibility of absence is one of the penalties that must sometimes be paid when high grade men are chosen for such offices After the first day the attendance at the general session was not nearly what it might have been to attain the best results for the good of the society For example, a total vote counted at mid session on the second day numbered only 216 However, our visitors from the east can hardly be blamed for wishing to see new sights rather than to listen to discussions on topics that may be more or less stale to them Besides it will all be in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION The final general session was enlivened by a heated discussion over the long mooted question of the admission of the heretical New York societies The Philadelphians made a gallant stand for the affirmative, but the self styled conservatives were in the majority against them As a matter of fact there is a great deal of sanctimonious cant about the Code, and those who preach it most loudly are as a rule the ones that practice it least. The practical details of the Code are almost never observed For example, is there one physician in a thousand who, when called to supersede another in a given case, assures himself that the former attendant has been paid in full for his services? When we take a bird's eye view of the Code it appears to us much like a placard asking *gentlemen* not to spit upon the floor In the sections is where the actual work of the Association is accomplished Here meet the gray bearded octogenarian and the beardless boyish graduate, the man of brains and the man of skill and the man who has neither—all brought together in the wholesome fraternal occupation of giving and taking information Here may be found a congenial atmosphere for all sorts of souls—from the village prayer meeting like quiet of dietetics and physiology to the rousing and militant acclaim of surgery And now why was it that the gynecology and surgery sections attracted more of an audience, perhaps, than all the other sections put together? Is it that we are all becoming specialists, or is it rather that the general practitioner seeks in such sources the secret of that prestige which has not been his? The few resolutions that were introduced in general sessions were, generally speaking, both timely and proper One of the most noteworthy was that by Dr Gould, favoring the establishment of medical libraries throughout the country The seven years of labor for a National cabinet department of public health should be furthered to its goal by the thousand dollar appropriation for the special committee on this department Dr Sanders' resolution for a National public health system, applicable to all parts of the United States, had its special object lesson no doubt in the yellow fever imbroglios of the past summer —*Denver Med Times*

THE meeting of the American Medical Association held at Denver during last week can not be regarded as other than most successful The fact that many of the local medical men originally came from the east led to the renewal of many old acquaintanceships, and this, combined with the hospitable welcome extended by the citizens of Denver increased the feeling among the visitors that they were indeed at home Then too, the situation of the "City of the Plains," surrounded as it is by many features of peculiar interest to medical men, served to stimulate the activity of body and mind and to give the proceedings, scientific and social, a zest not to be found at less favorable meeting-places The railroad and hotel accommodations were unusually good, and thus one of the most common sources of dissatisfaction was avoided, while the good will of the visitors was obtained at the start by the efficient methods instituted for the registration of members The meeting halls were conveniently situated, unusually large and well ventilated, and with few exceptions their acoustic properties were good The meeting was also very representative of the Association as a whole, for all sections of the country sent delegates to represent their views, with the result that the proceedings really represented the National profession as a whole This general representative meeting, therefore, far surpassed in importance to the profession some of its predecessors which have had a local color, and emphasizes the fact that the American Medical Association is becoming more powerful for good in the medical affairs of the country Sectional differences are disappearing, and politics, while active, is gradually decreasing in importance as scientific pursuits become more popular An innovation of importance was that of asking most of the members in Denver on Monday night to the dinner tendered to the Medical Editors' Association By this means the whole assembly started with a swing which carried it through the meeting, and friendships were formed which did much toward increasing the good feeling which was so apparent on every hand The work of the general sections was good, and the papers in many instances were discussed in a manner which showed that their hearers had ideas worth expression and worthy of respectful attention This was particularly true of the sections on medicine, surgery and gynecology, in which animated and spirited debates were constantly going on Aside from the general educational effects of the meeting there can be no doubt that it will exercise a good effect by informing many physicians of the exact therapeutic properties of the Colorado climate, for the program prepared for the entertainment of visitors was designed by the railroads and hotels to advance one's views of the possibilities of the consumptive's paradise —*Med News, N Y*

BUT the features of the Denver meeting that will stand out most strongly in the memory of those who attended it were the entertainments and excursions These began with the arrival of visiting members, but first rose to full dignity and form in the dinner of the American Academy of Medicine on Saturday evening when the Governor of the State and the heads of the Colorado State University, of Boulder, the University of Denver, and the Colorado Springs College, and the President of the Woman's Club of Denver with the fellows of the Academy responded to toasts and between the toasts the whole company, nearly half ladies, joined in singing college songs Sun day, the entertainments were quieter but none the less enjoyable, Monday evening they blossomed out in the Medical Editors' banquet, with Hare to preside, and Patterson of the *Rocky Mountain News*, Love, Mercy, Keen, N S Davis, Jr, J W Holland, J M Matthews, Hamilton, Wheaton and others to respond to toasts Tuesday evening the Section dinners were more largely attended than they ever have been before, over 500 members of the Association joining in them, 175 at the joint dinner of the Sections on Surgery, and Obstetrics and Diseases of Women, 83 at the dinner of the Section on Stomatology Thanks to the efforts of Dr E C Rivers and others who had the matter in charge, the future of the section dinner is assured Wednesday evening came the great reception given by the Colorado State Medical Society at the Brown Palace Hotel, and Thursday evening the receptions by the Denver and Arapahoe County Medical Society at the residence of its president, Dr E P Hershey and at the residences of other prominent citizens of Denver On Friday an opportunity to study climatology was given in an excursion up Clear Creek Canon to Silver Plume, 9200 feet above sea level Over 1700 doctors and members of their families were handled in seven trains on this narrow gauge railroad, given a lunch at Idaho Springs of full Western quantity and that would rate as of first quality in any Eastern city, and treated to some of the grandest mountain scenery in the world, and everything moved with perfect smoothness, to the complete satisfaction of the guests —*Phila Polyclinic*

AFTER a year of tedious detail work and much anxiety the Denver meeting came, and has gone into the past Over 1500 physicians from all parts of the United States were in attendance, and over 500 ladies accompanied them The first of the mountain outings, which came as a relaxation after the heavy scientific work of the week, was the trip over the Loop which gave the doctors and their friends a very startling introduction to mountain scenery The trip up Clear Creek Canon is one of continuous delight and amazement, and the 'Kodak fiend" was kept busy trying to get a snap at all the beautiful views Impressions, whether good or bad, of Colorado, were carried away that day by the wholesale Our visitors had already marveled at Denver's hospitality, but the reception given them at a stop over at Idaho Springs only added to their incredulity The people of that town were fairly teeming with hospitality and from the time the guests entered the town until they left, they owned the place, and a visit from Li Hung Chang himself couldn't have aroused more enthusiasm, in the townspeople than did these visitors One day in the mountains only whetted their appetite for more and the trip to Colorado Springs the following day was just as well patronized The Colorado Midland and the Denver and Rio Grande carried about 1500 doctors and their friends to the Pike's Peak region, and Colorado Springs people served luncheon to the guests at the Coburn Library, then the guests were taken to the various points of interest and the day was ended by a grand ball at Manitou Then came a general scattering to Cripple Creek, Glenwood Springs, Salt Lake and other places The quiet lull that has settled over Denver is the natural consequence of the week of excitement which kept every one busy and active The profession of Denver and Colorado have enjoyed entertaining the visiting brethren, and they feel well repaid for the energies put forth which has made the meeting the grand success every one pronounces it to be The only complaint heard is that Denver has set a pace for hospitality and entertaining which will be hard for the other cities who entertain the American Medical Association in the future to keep up with —*Colo Med Jour*

THE meeting of the American Medical Association in Denver this year was an important event in the affairs of the local profession and the visitors were very handsomely entertained during their sojourn in Colorado While the number in attendance was far below what was expected, yet the meeting as a whole was considered fairly successful The arrangements of the local committee were very complete and gave entire satisfaction to their guests The work of the Association seemed to be well in hand and except an occasional ripple, everything went along smoothly enough The question of admitting the wayward New York brethren was revived by Dr H A Hare, on the third day, and but for the fact that the presiding officer ruled the doctor out of order, after a very heated discussion, it is doubtful what the result of a vote would have been Certainly the house seemed about evenly divided The most notable paper presented at this session was one by Dr J B Murphy of Chicago, on the "Cure of Consumption by Compression of the Lung" This was indeed a very interesting feature of the meeting and one well calculated to elicit immediate and universal attention Dr Murphy's claim that he had and could cure pulmonary tuberculosis by compressing the lung through the introduction of nitrogen into the chest cavity in such quantity as to give the lung tissue complete rest for a few weeks, was a startling proposition and created great enthusiasm The subject is too new for intelligent discussion at this time, but the doctor is confident in his premises, which, he says, are based on successful experimentation Should his claims be substantiated, some queer conjectures and deductions must follow in regard to prevailing theories regarding tuberculosis and especially in regard to the germ theory —*The Critique* (homeo),

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THE Denver meeting of the American Medical Association was in many respects one of the most enjoyable meetings ever held by that body The profession and people of Denver did everything to make the meeting the grand success which it proved to be The dinners, receptions and entertainments were of a very high order and unusually enjoyable, but there is a growing feeling that these entertainments should be curtailed, as they take a great deal of time that might be employed to much better advantage in the work of the Association The suggestion made in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION that the general sessions be held at night, in lieu of the receptions, strikes us as a good one

The large number who attended the Denver meeting shows what great interest the profession at large feel in the American Medical Association to go in such numbers to such a distance to attend the meeting It is a very great privilege to be a member of the American Medical Association, and while the Association is growing in strength and numbers every year, it should include in its membership every reputable physician in the United States By becoming a permanent member one avails himself of all the privileges of the Association and gets one of the very best medical journals, if not the best, published in the United States, all for $5 00 per annum —*Atlanta Med and Surg Jour*

THERE are three things which prompt a physician to leave his practice for an extended trip to attend the meetings of the American Medical Association, — interest in the scientific work of the Association, the pleasure of meeting old friends and seeing and hearing prominent men of the profession, and the enjoyment of travel and a visit to new parts of the country In all these particulars the Denver trip has been eminently successful, and I have yet to hear of anything but praise for the forty ninth annual meeting We had all heard of the climate of Colorado, yet we began to hear of it anew as soon as the limits of that State were reached Everybody praised it, everybody asked how you liked it, and every local man in every speech or public utterance laid stress upon it Yet there was one thing in greater abundance than the climate, and that was hospitality Nothing more could have been done for the entertainment of the visitors Receptions and excursions were almost too abundant A desire to enjoy them at times interferred with the attendance upon the sessions of the Association, and on Friday, at the closing general meeting, there was but a corporal's guard of those interested in the politics of the A M A It is no easy task to arrange for the entertainment of 2000 people, yet the work of the various committees was admirable To be sure there will be some among such a large number of guests who fail to appreciate the hospitality, and show by their actions their lack of good breeding To my knowledge there were few examples, but one was at the reception tendered to the ladies and the visit to the smelter Some of the visitors failed to appreciate the labors of the committees and objected because the street cars were not free, and two, to my personal knowledge, made a decided kick against paying two dollars and a quarter for a dinner, room and breakfast in a six dollar a day hotel, saying that they had been told the rate was but two dollars These trivial things must be expected, and but serve to add a sort of spice to the general enjoyment Speaking of hotels, there are in Denver good hotels and bad ones, and it may be that because my acquaintanceship is limited, I met more people who had the bad ones There was a good deal of complaint at three or four of the hotels over the accommodation and the table, and some who were paying $3 00 and $3 50 per day even went to restaurants to get a square meal I know I did, and had it not been for the generous banquets on the first two nights and the hospitable receptions following I should have left Denver hungry The program for the different Sections was very full, and had there been in attendance as many as were there represented there would not have been time for each paper, but [illegible] of the prominent men whose r [illegible] not [illegible] the character of the work done was of the highest order, and although no strikingly new theory was presented, the discussions were animated and profitable. Dr. J. M. Mathews of Louisville, Ky., was elected President for the ensuing year, and Columbus, O., was selected as the next place of meeting. Apparently such a program was cut and dried for the occasion with all the quickness of the drying powers of Colorado air, for there was no opposition. This is as it should be; politics should have no place in the A. M. A., but nevertheless it usually has an important one.—*Atlanta Med. Weekly.*

THE Denver meeting of the American Medical Association will forever live in the memory of those who were in attendance as the most complete in every detail in recent years. While the Philadelphia meeting may never be surpassed in the magnitude of work accomplished and the number of physicians present, yet in the uniqueness of the manifold attractions aside from the scientific work of the meeting, Denver seemingly has capped the climax. This is largely the result of the peculiar, favorable location and the bountiful spirit of hospitality, for which the Denver and Colorado profession are well known. The success of the Denver meeting is due primarily to the local committee of arrangements, in Denver, which, under the wise and pushing direction of Dr. Graham, successfully engineered this most gigantic undertaking in a way that will forever redound to the credit of Western medicine, and Denver hospitality in particular. Denver, certainly is the Queen City of the West, and the grand State of Colorado a State of great and unlimited resources. But above all, it is the climate with which this State is blessed which makes it of interest to physicians, for it says to the weary and afflicted of the East, come and rest in the God given sanitarium, where health will be given you and wealth, too, if in patience and good will you but pursue the even tenor of your way. The evidences of the good that comes from a change of residence to those afflicted with pulmonary disease is apparent in almost all localities of Colorado. And such cumulative revelations appeal to physicians, and give to them renewed hope for the many cases constantly coming under their observation. The American Medical Association naturally must feel under lasting oblications to their Colorado brethren for the opportunity of meeting in Denver, just for this one impressive fact alone. The main interest of the physicians in attendance, however, was centered in the work of the Association, which was characterized by an abundance of scientific papers and thoroughness of their discussion in the several sections. In the general sessions many important measures were adopted, the chief of which was the determination to bring within the domain of standard recognition certain medical colleges which have, thus far, failed to qualify, and the means adopted was that of barring from membership in the Association members of the faculty of these schools, which fail to conform to the requirements of the Association of American Medical Colleges. The attempt to reconcile the Medical Society of the State of New York with the Association failed once more, and as a result this old sore must continue to suppurate until some wise measure may, in the future, be adopted which will give to the Association the valuable membership which must come when peace shall be declared between these bodies. Taking it all in all, we hardly expect to see the like of the Denver meeting again. It was unique, superb and scientific, and all who attended were well repaid many times over for the time and money spent in the pursuit of knowledge, experience and a good time.—*Med. Fortnightly.*

UNDER the lengthened shadows of the Rockies lies the most beautiful and charming city of the Union, Denver, the pride and glory of Colorado and the modern Palmyra of the plains. One does not tire in looking on its magnificent structures, public and private, nor can he repress surprise and admiration, if he would, at the spirit and grit of the citizens, who allow no obstacle to bar the way to a still higher eminence which becomes more pronounced as the years throw into her lap the wealth that still flows from the ores mined in the neighboring hills. As its climate is invigorating, so is the spirit that has reared on the western plain a city that rivals that of "the Chaldees' excellency." Thither went the leading lights of the profession, in the first week of June, from every State in the Union and there gathered in associations that have for their object the highest interests of the profession as well as those that are related to the welfare of others. The American Medical Association was the chief magnet around which gathered others whose aim and work looks in the same direction, chief of which was the Association of American Medical Colleges. Its aim and work are of no less importance, because primary and fundamental, preliminary to that of the Association of physicians. The two associations are very closely connected, and each endeavors to contribute to the efficiency of the other. This was shown by an action of the Medical Association when it adopted a course of action which excludes from its membership the professors of any medical college which does not make its entrance requirements and terms of instruction conform to those prescribed for its membership by the Association of American Medical Colleges. The result of this action will be that no professor of a college can become a member of the American Medical Association, nor the college in which one is a professor become a member of the Association of American Medical Colleges, unless the college adopts the requirements made by the Association. This action places the mark of Cain on all wanderers from the path of professional ethics in the beginning and at the end. Now if State medical associations shall take like action, some bodies will get squeezed out. The entertainments provided by the local profession were all that could be desired, and so timed were they that they did not interfere with the legitimate work of the Associations represented.—*Med. Herald.*

THE meeting was large beyond most persons' expectations; it was also exceptionally representative, for those in attendance were for the most part men of mature age, without the large element of recent graduates usually encountered. The social accessories were enjoyable and to a great extent novel. Enthusiasm and good fellowship prevailed to a degree unsurpassed, so far as we know, at any of the Association's previous meetings. It is safe to say that the fair city of Denver has proved its capability of taking good care of a large number of visitors; it has also shown its willingness to do so. It was thought by a number of persons that at this meeting some way would be found to reconcile the differences existing between the Association and the Medical Society of the State of New York. We lately expressed some reserve on this point, and the result justifies our lack of faith. Nothing has been done to restore the former relations of the two organizations. Nevertheless, a way was pointed out by the President, in his address, whereby individual members of the profession might join the Association without regard to their State affiliations. It would apply, however, only to those who might be willing to subscribe to the Association's Code of Ethics. Still, it would doubtless let in a great many desirable men, and it seems probable that some such plan will be adopted sooner or later. One of the most important achievements of the meeting was the passage of a measure barring from membership, after a certain date, all physicians who are members of a teaching staff of any medical school that does not conform to the requirements of the Association of American Medical Colleges. The result of this will be to force all the medical schools of the country to adopt the four years' course, on pain of being unrepresented in the Association. It has taken many years to accomplish the enactment of such a measure, and the Association is to be congratulated on its adoption at last. The scientific work done in the Section meetings was quite up to the standard, and the meeting may be said to have been eminently satisfactory from this point of view.—*New York Medical Journal.*

WE do not believe that the exhibitors at the American Medical Association are ever treated right. They contribute very much to the interest of the Association; the exhibitors constitute a very important feature of this meeting. We understand that at the Denver meeting not one of them received a ticket for the excursion around the Loop; they were not invited to attend the receptions. The gentlemen attending and in charge of these exhibits are in every sense of the word gentlemen. They, as a rule, are men who have traveled; they are men well educated, at home in good society and we believe that they should receive more recognition and should have more courtesies extended to them than they received at the Denver meeting. We do not mention these facts to find fault with the Committee of Arrangements, but to find fault with the way that they are and have been treated at the meetings of the American Medical Association, and trust that they will be treated differently at the Columbus meeting. The next place of meeting will be Columbus, Ohio. Judging by the members of the Columbus profession present at the Denver meeting, the American Medical Profession will be well taken care of next year. The new code bobs up in a general session and bobs down. It is unfortunate that the medical profession of New York is not in full sympathy with the American Medical Association. Whether the new code is right or wrong, we believe that some concessions on both sides are desirable. We trust that between now and the Columbus meeting something may occur which will bring about the burial of the hatchet.—*Denver Med. Times.*

THE meeting of the American Medical Association at Denver was a decided success in every particular More than 1500 members were registered as delegates, with fully 500 non registered doctors in attendance, and nearly 1000 visiting ladies The section work was good, notably in the surgical and gynecological departments, in the latter fully 300 members being often present There was practically no friction in either section, the debates being of highly interesting character, without personalities The two subjects which elicited most interest were the remedy proposed by Dr John B Murphy of Chicago, for pulmonary tuberculosis, and the discussion on the relation of pelvic diseases to insanity and other nervous affections, participated in by the neurologists and the gynecologists The joint discussion by the gynecologists and neurologists showed that there is a tendency for the two to come together, that is, no gynecologist can succeed in curing a large percentage of his cases unless he has a pretty thorough knowledge of neurology or works with a neurologist, and no neurologist can properly treat quite a large proportion of his female patients without recourse to gynecological measures Dr Joseph Price of Philadelphia was particularly positive that many cases of insanity, as well as epilepsy and other neuroses depend upon gross pelvic lesions, and can be cured only by their removal, and related scores of cases in support of his position —*Am Jour of Surg and Gyn*

THE scientific work of most of the Sections was up to the average, but in several the programs were overcrowded, a number of inconsequential papers being allowed to creep in A more than usual number of absentees from the list of members whose names were on the program for papers was noted Men who are unable to meet their engagements should make it a point to have their names removed from the Secretary's list of promised papers before such be included in the final program. One of the small annoyances to the audience is the non appearance of an author whose name and paper have been published far and wide, and who is perhaps one of the principal attractions of the meeting It is to be hoped that our next meeting will be more productive of original research The fact that the time of the scientific Sections is cut short during the morning sessions, to allow of attendance upon the general meetings with their political fuss and fol de-rol, has raised considerable criticism, and it is desirable that more of the general session work be placed in the hands of the Executive Committee, and thus valuable time saved to the scientific Sections —*Ophthalmic Record*

THE American Medical Association will hold its meeting of 1899 in Columbus Our city has been named to follow in the list—Denver, Philadelphia, Atlanta, Baltimore and all those that have preceded It certainly is an honor to the city and a compliment to the profession and business men who extended the invitation to the Association to come here The choice is one of responsibility, both for the Association and for the city The former has expressed its confidence in our representatives, and it now devolves upon us as Columbus citizens and as members of the medical profession, to see that their promises are more than fulfilled That this will be done we most firmly believe It means work—painstaking detail work to accomplish this—but it will be after all work of love, and one we have said we only awaited the opportunity to take up It shall be our endeavor to prove the wisdom of the choice of Columbus, and to the Association the *Columbus Medical Journal* extends the thanks of our citizens for this opportunity to test the virtues of the Buckeye Capital as a convention city —*Columbus* (Ohio) *Med Jour*

THE American Medical Association may well feel proud of the welcome accorded it in the West, and of the unstinted hospitality displayed by the people of the various localities visited by its members It was generally agreed that one of the most remarkable of the striking features of the memorable excursion around "the Loop" was the manner in which the people of Idaho Springs received and entertained upward of two thousand visitors The whole town turned out, ladies, children and all, and made the occasion one huge lawn party, in which all were individually welcomed and made happy, yet it was done with such an absence of apparent effort that the guests became possessed with the notion that such wholesale entertainment must be a part of the every day life of that town It was one link in a chain of many pleasant recollections which the visiting members carried home with them —*Med Record*, N Y

VIEWED from every possible standpoint, the meeting of the American Medical Association, at Denver, was the most successful in its history The only other meeting with which it could be compared was the semi centennial, held at Philadelphia, but since that meeting was in the heart of the most populous section of our country, having fully 30,000 doctors within a radius of fifty miles, and since only a semi centennial can justly be compared with it, it must be left out of consideration, in which case the Denver meeting goes into history as the banner one There can be no question that the holding of our National convention in the State of Colorado has been of great service to the profession, as well as to the invalid public Much definite knowledge has been gained by the members which is practical and valuable, and could not have been secured in any other way —*Med Mirror*

DESPITE the Hispano-American war, the meeting at Denver was a success, and the Association began the second half of its century of existence under most auspicious circumstances The general meetings were well attended, and the Section meetings were also graced by the presence of many members From a scientific point of view the meeting was a marked success It is to be regretted that the present war prevented the President of the Association, Dr Geo M Sternberg, Surgeon General U S A, from being present His address, which was a masterly one, was read for him during his absence The 1500 members who were present deplored the necessity of this hiatus The social features of the meeting were on a grand and magnificent scale, and it will be many years before the Denver meeting is forgotten —*St Louis Med and Surg Jour*

DENVER has redeemed her pledges, and the meeting of this Association just closed has been one of the most satisfactory in its history The very atmosphere of Colorado seemed to be imbued with hospitality The attendance exceeded all expectations the registration reaching 1600 In the absence of President Sternberg the chair was gracefully filled by First Vice president Joseph M Mathews, M D, of Kentucky The entertainments provided by the local committee were not only elaborate but pleasing in the extreme, and the memories of Denver's profession and Colorado's beauty spots will ever remain in the minds of the visiting physicians —*Med Fortnightly*

THIS meeting of the Association was a most successful one in many respects In numbers it was largely attended, 1100 members having registered at an early hour of the first day The Treasurer's report shows a very healthy condition and the enrollment of 1500 additional members The papers read were uniformly interesting and progressive There seems to have been much less of political action Dr Keen's address of last year seems to have done some good The usual [illegible] of contention, the secretaryship, was left at rest for one [illegible] A number of new measures were introduced, one of [illegible] was of great importance, especially in connection with [illegible] education —*Nashville Jour of Med and Surg*

WE predicted last month that this meeting would [illegible] unusual worth, and now that it is past we can say it [illegible] *ful if in the history of medicine there has ever been a* [illegible] of more general interest or one more [illegible] to be [illegible] unreservedly termed successful. The efforts of [illegible] physicians were Herculean, and [illegible] even to detail The work of the [illegible] instances far above the average [illegible] tion might be mentioned as [illegible] limited space precludes the [illegible] abstract of those which [illegible] be published, and as don[illegible] of the Association, or, [illegible] get the benefit of at least [illegible]

THE Denver meeting [illegible] the most pleasant [illegible] ciation has yet held [illegible] and the various [illegible] time and were [illegible] hundred on Tuesday [illegible] remembered that [illegible] of the United [illegible]

THE meeting [illegible] ver was an [illegible] thalmology [illegible] the fam[illegible] were [illegible] Thompson [illegible] and [illegible] the Section Drs Black, Rivers and others of Denver did much to make the meeting successful in adding to the comfort of their fellow ophthalmologists and earned their deepest gratitude.—*Ophthalmic Record*

The Association convened in Denver on June 7 Considering the location of the meeting, making it necessary for many to travel a long distance, the attendance was quite large and representative of the ablest and most progressive elements in the organization The Sections were well attended, and the long list of papers presented in each by leading members indicated the depth of interest in the work, and the fact that each branch of medical science is receiving due attention from the Association —*Medical Standard*

The forty ninth annual meeting of the American Medical Association at Denver, June 7 10, was attended by a representative of the *Lancet* in order to let our readers have an early and complete account of the meeting From the expression of all who attended, we believe the meeting was as pleasant and profitable as any that has ever been held The attendance was large, there being over 1500 registered To dwell on all the notable features of the meeting is impossible The discussion of appendicitis in the Surgical Section prominently participated in by Drs Keen and Murphy was probably the feature of the meeting All the Sections were well attended and profitable, the Section dinners and receptions extremely pleasant and altogether the Denver physicians and the Denver people did all in their power to make the meetign a memorable one —*Memphis Lancet*

The meeting of the American Medical Association at Denver this year has been in every way successful and progressive With a single exception, referred to elsewhere, there has been no striking discovery made public, but work in all the Sections has been more serious and solid than has before been customary The growing popularity and power of the Association were made plain by the increased membership The registration this year has been 1322, this number being next to the largest in the history of the organization —*British Medical Journal*

The Denver meeting will pass into medical history as one of the most pleasant, enjoyable and profitable meetings the Association has yet held, the arrangements were well carried out and the various Sections carried out their programs on schedule time and were well attended —*N A Jour of Diag and Practice*

The meeting just closed was one of the most interesting and profitable and most largely attended in the history of the Association No doubt this meeting will remain in the memory as one of the pleasantest in the history of the Association —*Annals of Gyn and Ped*

Never in the history of this Association has a more pleasant and profitable meeting been held, than that which closed at Denver June 10 —Kansas City *Med Index*

NECROLOGY

John Boardman M.D , Buffalo, N Y , died July 9, aged 70 years He was graduated from the Medical Department of the University of California in 1853 and, later, was for two years demonstrator of anatomy in the Medical Department of the University of Buffalo, from 1854 to 1858 physician to the Buffalo Orphan Asylum, and attending surgeon to the Buffalo Hospital of the Sisters of Charity from 1856 to 1873 In 1883 he was appointed on the board of managers of the Buffalo State Hospital for the Insane He served on the board until 1891, when he resigned, owing to ill health

George W Burton, M D , Mitchell, Ind , July 13 ——William B Cochran, M D , Middleburg, Va , aged 89 years —— Andrew J Hare, M D , Milwaukee, July 6, aged 60 years David S Hayes, M D , Hollidaysburg, Pa , July 10, aged 65 years ——Charles L. Knowlton, M D , Northampton, Mass , July 5, aged 74 years —— E A Parkinson, M D , Hart, Mich , July 12 ——Frank G Seaman, M D , Seneca Falls, N Y , July 12, aged 35 years ——J J Warren, M.D , Sharon, July 1

Warren Pierce, M D , Plymouth, Mass , died July 10, *aged 50 years July 29, 1862,* he enlisted in Company K, Fourteenth Massachusetts Regiment, as a private He was detailed as hospital steward soon after and served two years in that position, when he was appointed second lieutenant of the Fifty sixth United States colored infantry, stationed at Fort Lookout, where 5000 Confederate prisoners were confined In July, 1864, his regiment was attached to the Twenty fifth Army Corps and ordered to the front at Petersburg Lieutenant Pierce took part in the operations against Richmond and was the third Federal soldier to enter that city He was graduated from Harvard Medical School in 1869

William Henry Hodgman, M D College Physicians and Surgeons, N Y , 1873, died at Saratoga, N Y , July 15, aged 46 years He was health officer of Saratoga Springs from 1878 to 1879

MISCELLANY

Prof Daniel R Brower of Chicago has been elected as a foreign member of the Moscow Society of Neurology and Mental Science

A Common Complaint —"What are you treating me for, doctor?" "Loss of memory You have owed me a bill of $10 for two years"—*Tid Bits*

The Souvenir Volume *presented to Professor Durante of Rome* on the twenty fifth anniversary of his professorship, contained 2000 pages in the three volumes, and sixty original communications, including one on the resection of the Gasserian ganglion by Keen and Spiller of Philadelphia, and one by Biunie of Kansas City, on encapsulated epithelioma

Quarantine Burned —From the *Register*, Mobile, Ala , we learn that the quarantine plant, located in the lower bay, a mile above Fort Morgan, caught fire July 8, and the main building was destroyed The amount of insurance on the plant was $13,240 The plant was built in 1892 and cost about $60,000 Of the amount required for its erection the State of Alabama appropriated $50,000

War Correspondence —The readers of the Journal will regret that Lieutenant Colonel Senn's correspondence last week was sent to the *Chicago Record*, and the letter of this week was sent to the *Chicago Tribune* As they appeared in those papers before we could get them in type, we were unable to use them. The manuscript which we received has been sent to the Newberry Library

Surgical Treatment of Sterility —Mann (*Annals of Gyn and Ped* , July), in discussing this subject, enumerates the causes of this condition as vaginismus, atresia of the vagina, stenosis of the os, lacerations of the cervix, uterine displacements, endometritis and adenomatous disease, cervical catarrh and tumors He considers the only relief as surgery, modern surgical methods implying practically no danger in this class of operations

Plastic Operations on the Tubes —Ries (*Annals of Gyn and Ped* , July), believes that the conviction that too many tubes have been removed is gaining ground, and plastic operations on the tubes are being resorted to instead He considers plastic operations indicated in obstruction of the tubal channel by benignant tumors, extra uterine pregnancy in certain cases, and "inflammation in cases where there is no pus or other signs of an active stage of the inflammation" Diagnosis of such occlusion may be difficult

Hip Joint Amputation —Noble, in *Annals of Surgery* for June, reports six cases of hip joint amputation One injured by crushing high up in the thigh, two from disease of the bone involving the head of the femur and acetabulum, three and made for osteosarcoma in the tibia Two were done by trans fixion, and three by the use of Wyeth's pins On account of the objection to the latter method, *i e*, "that when the pressure is removed, the amount of blood lost from the oozing of small vessels is perhaps greater than in any other means," he believes the transfixion method is the best

An Editorial Change—The *Annals of Gynecology and Pediatry*, for June, announces that hereafter Dr B Sherwood Dunn will be jointly interested in the editing and publishing of that journal Dr Dunn was graduated at Bellevue Hospital Medical College, New York, 1884, and from the academic department of the University of France, Paris, in 1887, and the medical department of the same university in 1888 He has also had several years' hospital experience in Paris, and in 1897, in recognition of his work in France, was decorated by the French government with the cross of *Officier d'Académie*

Operative Wounds of the Thoracic Duct—Cushing, in *Annals of Surgery* for June, summarizes seven cases collected from the literature and adds to these two from the surgical records of the Johns Hopkins Hospital If the duct itself is injured, he considers suture the ideal method, but only in cases where the duct is fully exposed and not completely divided He advises placing a ligature about the duct on the proximal side of the wound, and control the leakage by a gauze tampon This would act as a safety valve and allow the chyle to escape if the pressure in the duct became too great. If the leakage should become uncontrollabe, the ligature should be tied in an effort to readjust the collateral circulation, trusting for some branch to carry the lymph into the venous circulation

Lactic Acid in Arthritis Deformans—Zolotorin, *La Med mod*, *Vol ix*, in a case of ten years' standing, the last year of which the patient kept her bed, began with ten drops on an empty stomach, no food being allowed for an hour and a half afterward, and gradually increased the dose to forty drops a day In three weeks the woman could get out of bed and walk a little, the pains being much relieved and the joint circumference slightly diminished The improvement lasted until no care was required, and ordinary duties could be resumed No internal medicine other than lactic acid was given, and no external placebo except slight massage

Fortress Monroe as a Hospital Point.—The present indications are that Fortress Monroe is to be made an important center for the care of the sick and wounded during the present war A corps of twenty surgeons has already been detailed for duty as a beginning, and the large wooden building, at first proposed, is likely to be superseded by tents with ample conveniences These are to be located on the moat near the fort hospital building, and the superiority of the place, as demonstrated in the civil war, is again to be corroborated Yellow fever, although regarded by the citizens of Tampa and other points on the Florida coast as a possible source of anxiety, especially at this season, has not thus far ranked as a menacing objection of any magnitude Still it is not certain that the infected will be brought to Old Point when farther North so easily minimizes the difficulties Every confidence in the wisdom of the Executive, however, is freely expressed

Blastomycosis of the Skin is the name proposed by Buschke for a new affection described by him at the recent German Dermatologic Congress, with microscopic demonstrations of one case It is a primary disease of the skin, due to pathogenic blastomycetes, clinically resembling carcinoma, but without its hard edges, histologically belonging to the granulation tumors, and anatomically occupying a middle ground between mycosis and infective granulation tumors Infection of the blood may lead to the formation of internal tumors, but the skin is the chosen site and entering point even for internal manifestations He considers the existence of primary intestinal blastomycosis also probable The existence of pathogenic yeast fungi is established, belonging to the saccharomycetes and oidii but nothing indicates their connection with malignant tumors —*Munich Med Woch*, June 21.

Spanish Cruelties—Curses, like chickens, come home to roost Some enthusiastic Cuban has delved in the old Spanish libraries and from a number of books has photographed the wood cuts made at the time, selecting those which illustrate the cruelty of greed of that nation They form a collection about as grewsome and hideous as the famous chamber of horrors in Brussels In one picture the methods employed by Pizarro and Cortez to compel the poor Aztecs to reveal the source of their wealth are shown The favorite system was to stretch a man on the ground between two posts and then to build a fire near the soles of his feet Another was to set fierce hounds upon a man The terrible part of the story is that these practices were not done underhandedly, but openly, by their perpetrators, and the drawings were put in these old books to show how ingenious and efficient the system was —*New York Mail and Express*

Melancholia—Loveland in the *New York Medical Journal* of June 25 presents a contribution on this subject, accompanied by a table showing the results of an examination of the blood in fifty seven cases He considers the main feature of the treatment, feeding, sometimes forced feeding with liquid food, and in the fifty seven cases, concluded from the study of the blood that it was neither deficient in hemoglobin nor hemocytes at the initial or early stage of the disorder, in fact, he found it above the average in these particulars He says "That after the loss of appetite, always present, and the frequent entire refusal to take food, and the impaired digestive power associated with such a mental condition, the blood first loses its richness in coloring matter, and later in the corpuscular elements " He considers it a circumstance worthy of note that while many people with thick blood are melancholy, he has never seen any signs of melancholia in profoundly anemic cases

Albumosuria in Medical Practice—In the *American Journal of the Medical Sciences* for July, Fitz reports a case of myxedema in which albumosuria continued throughout the progress of the disease, a symptom which, with but a single exception, has hitherto been unrecorded He says that while transitory albumosuria has proven of but "little practical value except in the diagnosis of acute pneumonia, deep seated suppuration, including meningitis, and of macerated fetus," greater value is to be attached to persistent albumosuria, and its importance has been especially suggested during late years in the diagnosis of multiple but latent tumors of the trunk, principally multiple bone tumors and in myxedema, and in but few cases of these affections "Whatever the value of albumosuria may be in diagnosis, its persistent and excessive presence is apparently a sign of grave prognosis, since the cases in which this condition has been found have, almost without exception, proven fatal "

Jaundice in Typhoid Fever—In the *American Journal of the Medical Sciences* for July, Da Costa presents observations made on this subject in the Pennsylvania Hospital during the past winter In some of the cases jaundice was associated with parotid swelling, which he considers more than a coincidence In some it occurred as a late symptom and in one case, which he considers unique, it distinctively preceded the development of typhoid fever, occurring during the latter part of the incubation period Previous to the five cases reported, he has met with but one instance of jaundice in typhoid fever, although jaundice is not infrequent when there is a complication of malaria He finds that the symptoms attending jaundice are not constant, but as a rule the symptoms of a severe case of typhoid fever Delirium is apt to be present, but it was not much aggravated by hepatic conditions, and there were intervals when the mind was clear High temperature [illegible] rule, chills not uncommon, and the pulse remained rapid. He believes that jaundice in such cases is usually due to a blood condition, with more or less disorganization of the red corpuscles and often associated with alteration in the liver cells. All the cases reported show the symptom to be a grave one, the fifty-two cases resulting in thirty-three deaths and nineteen recoveries.

Micro-organisms Resembling the Tubercle Bacillus have been isolated by A. Moeller from timothy and other grass and the fresh droppings of the domestic animals. Inoculated into rabbits they produce a miliary tuberculosis, nodules in the omentum, giant cells, cheesy patches in the lungs, deceptively similar to the lesions of genuine tuberculosis. Other animals and a few rabbits were not affected by them. His preliminary communication in the *Deutsche Med. Woch.* of June 16 describes their rapid, dry growth, yellow sediment, and resistance to alcohol. They stain like the tubercle bacillus, which they closely resemble morphologically and in their growth on glycerin agar. On bouillon this micro-organism forms a delicate, transparent, dry, pale yellow skin on the water, extending 2 to 3 cm. up the glass. Shaking the tube breaks off fragments which sink to the bottom. He concludes by detailing the points in which this "timothy bacillus" differs from others in its growth, etc.

The Wounded in this and the Previous War.—Surgeon-General William K. Van Reypen, United States Navy, according to the Washington lay press dispatches "has received a report from the surgeons with the fleet that in the many cases of wounded, some of them serious, not a rise of temperature nor an accumulation of pus has appeared in any case. From a medical standpoint this is said to be a marked advance from the conditions during the Civil War, and is attributed to the introduction of antiseptic treatment of wounds." An old army surgeon in the confidence of the Journal excepts to this statement in part, for he maintains that "in the Civil War the most exemplary cleanliness was enforced in the hospitals, and that the method of irrigation was adopted from the start; further, that there was a rivalry among the ward masters of the pavilion tents as regards the best appointments and comforts. This was certainly the case in the Western divisions of the army, where private mansions and close quarters were from the first tabooed. Certainly proper drainage was always the aim in the treatment of suppurating wounds." Much talk in reference to "laudable pus" was the vogue, but was generally looked upon as a significant sign of ultimate recovery. In fact, he says, "To some it was an 'unknown god,' ignorantly worshiped." To all of which may not the statement be added that in the matter of antisepsis there are many makeshifts which scarcely baffle the Anglo-Saxon mind. It may be recalled that bromine, when introduced by Surgeon Goldsmith, vanquished the hospital gangrene occasionally prevalent.

A German Medico-Legal Decision.—The so-called "Seidel case" (a trial for libel), recently terminated at Brunswick, Germany, was a remarkable judicial proceeding, unlike anything met with in the courts in America or England. The Government of Brunswick and certain assistants in the Brunswick General Hospital united in prosecuting the brothers of the late Dr. Seidel, one of the attending surgeons in that institution, for publishing a charge to the effect that he had been impelled to commit suicide by the intrigues and falsehoods of his assistants and by the severity of the Government in suspending the professor from his hospital functions before he had been heard in his own defense. The trial excited great interest in the medical profession in Germany, and many eminent surgeons testified as experts, the weight of opinion being strongly in favor of the correctness of the late Dr. Seidel's conduct and against the manner in which he had been treated by the assistants in the hospital. Their principal grievance against him appears to have been his indifference to antiseptic precautions in surgery, but the expert witnesses declared that the assistants had exaggerated ideas on this subject. The court in the end acquitted the brothers of Dr. Seidel and declared that the accusations against the deceased surgeon were unjust.

The Unsung Heroes.—Dewey and Bagley and Hobson and Schley and Blue and Neville and Shaw, the heroes of Guatanamo, Capron and Shafter, and all the long list of men who have distinguished themselves in this war, officers and men, are deserving of all the generous praise that has been bestowed upon them for the brave deeds they have done and for their unfaltering devotion to duty. Their example is of inestimable value for its influence upon their fellow citizens both in civil and military life. They are a source of inspiration which tends to a higher order of patriotism in all the walks of life and all the duties of the citizen. The patriotic uplift is discoverable to the most distant part of the country, and in the remotest hamlet. It manifests itself in greater love for the flag, greater pride in citizenship, greater fidelity to civic duties. War is a great character maker. The heroes of the field and of the wave are its exemplars, and under the spell of hero worship men grow better. All honor to the Deweys and Hobsons and the rest of them. Yet there is one class of heroes whose praises are seldom sung and whose patriotic sacrifices receive but slight recognition in the dispatches from the front. But they are there, exposed in greater or less degree to the fortunes of war, doing their duty without hope of acknowledgment, and performing their daily and nightly tasks with a devotion that knows no flagging, and without the spur and the inspiration of the cavalry charge or the shriek and crash of the flying shells on board the man of war. The surgeon's duties on the field and in the hospital tent preclude the incentive of excitement, and are attended by none of the dramatic action of war. No matter what the conditions, whether for the time in comparative safety or when his scene of operations becomes the center of the hottest fire, as sometimes happens, he stands to his post, offering his own that he may save the life of another. While remembering the heroes of the sabre and the gun, do not forget the heroes of the scalpel and the probe. They are never courtmartialed for cowardice. And no wonder. Bravery in the face of danger is no new thing for them. The volunteer surgeon has not learned courage and ceased to be afraid because of any "baptism of fire." He has faced danger before. The faithful and skillful doctor is always in the thickest of the fight in the battle of life. He has learned all there is to be learned of bravery and self-sacrifice in the midst of the deadly epidemic, and in the panic of pestilence and plague he acquired the courage which makes a hero of him now. God bless the doctors! They are the salt of the earth. No class of men see so much of the suffering and misery of life, none do so much to relieve distress without hope of reward in this world. And the doctors at the front—congress passes no resolutions of thanks to them, and presidents and public do not applaud their fidelity to duty. Why, then, are they there? What glory awaits their efforts? Their only reward is the satisfaction of duty done, the approval of their own consciousness that their skill and experience and their limit of endurance have been spent without hesitation in the service of their country and in behalf of their fellow men. Remember the men, give praise and honor to sacrifice and courage and steadfastness in the face of the enemy, and remember the unsung heroes, too.—*Minneapolis Journal*, July 14.

Commercial Greatness of the United States.—The Chief of the Bureau of Vital Statistics of the Treasury Department kindly furnishes us the following:

More than three-quarters of the $1,200,000,000 worth of our productions which were sent abroad during the fiscal year just ended went to Europe, while only one-half of the $600,000,000 worth which we imported came from Europe. Nearly one-half of our exports of the year went to the United Kingdom alone, while our imports from the United Kingdom were less than one-fifth of our total importations.

While the full figures of the fiscal year are not yet complete, the reports of the Bureau of Statistics covering the eleven months ending June 1 are sufficient to show who have been the purchasers of the enormous aggregation of domestic pro ductions which the United States has distributed to the world in this year of her greatest commerce Our sales to Europe are more than three times as much as our purchases from that part of the world, the exports to Europe during eleven months of the year being $901,014,786 and the imports from European countries in the same time $281,091,002 To the countries of North America we have sold 50 per cent more than we have purchased from them, our exports to them for the eleven months being $127,125,929, against $81,287,488 of imports from them To Africa we have sold more than double the amount of our purchases, the exports to that part of the world being $16,097,959 in the eleven months whose record is completed, and the imports $6,786,017 Here the scale turns against us, for in our commerce with South America, Asia and Oceanica our sales to each of those countries have been far less than our purchases from them To South America we sold during the eleven months in question only $30,748,846 worth, while our purchases from that part of the world were $85,859,245 To Asia our sales were but $41,561,531 and our purchases there from $85,381,158 To Oceanica our sales were $19,979,555 and our purchases $23,365,132 It is gratifying to observe, however, that in our trade with Asia, where all nations of the earth are now striving to extend their commerce, there has been a material gain in our exports during the year, the total being nearly 15 per cent. greater than that of last year

The figures for the year will show a marked improvement over those of last year, the exports to Europe being more than three times the imports from Europe, while last year they were not quite double the imports, the exports to North American countries will be nearly fifty million dollars in excess of the imports from these countries, while last year the excess of exports was less than twenty million dollars, our imports from South America will be 150 per cent in excess of our exports to that part of the world, while last year they were more than 200 per cent greater than the exports

There is not a country, indeed scarcely a spot, in the civilized portions of the globe which has not been a customer of the United States in the year just ended From the United Kingdom, whose purchases for the year are nearly six hundred million dollars, down to Paraguay with a total of less than one thousand dollars, the continents, countries and the islands of the earth have purchased of the plenteous supplies which the United States has been able to offer to the world in this greatest year of her commerce To the United Kingdom the exports for the eleven months were $501,756,263, against $452,926,890 in the corresponding months of the preceding year Germany came next as a purchaser, our total sales to that country being $143,416,065, against $116,881,478 last year The next largest purchaser was France, to which we exported $87,012,841 in the eleven months of the year, against $54,575,298 in the corresponding months of the preceding year Next came British North America with purchases amounting to $76,160,414, against only $59,676,594, then Netherlands with $59,733,226, against $46,436,034 last year, then Belgium with $44,006,379, against $30,469,416 last year, Italy, $21,849,377, against $20,205,301 last year, Mexico, $19,304,687, against $21,396,395 last year, Japan, $19,260,415, against $12,466,433 last year, British Australasia, $14,213,606, against $16,197,092 last year, Brazil, $12,694,163, against $11,413,345 last year, Denmark, $11,604,578, against $9,627,047, British Africa, $10,953 954, against $12,216,080, Spain, $10,193,809, against $10,208,637, and China, $9,036,727, against $10,981,919 last year, while none of the other countries of the world reached the $10,000,000 line in the eleven months whose record is now complete

Our purchases abroad, as already indicated, are much less than those of last year, being for the eleven months $563,770,032, against $679,557,391, and for the full year likely to be but a trifle in excess of $600,000,000, against $764,730,412 last year This year our total exports will practically double our imports, while last year they were less than 25 per cent. greater than our imports As above stated, one half of our importations came from Europe Our largest purchases during the year were from the United Kingdom, which, as already indicated, was our largest customer, our total purchases in the eleven months from the United Kingdom being $101,454,480, against $148,588,675 in the corresponding months of last year The next largest purchases were from Germany, from which we bought in the eleven months $61,916 809 worth of goods, against $98,364,012 last year, Brazil next, from which we bought $58,203,762, against $64,695,383 last year then France, $49,480,413, against $60,095,025, British North America, $28,528,539, against $34,757,841 last year, and during the eleven months of 1898 we bought $24,164,842 from British India, $23,180,892 from Japan, $19,484,387 from China, $18,209,368 from Italy, and $16,142,491 from Mexico

The following table gives our exports to, and imports from the grand divisions of the world during the eleven months ending June 1, 1898

	IMPORTS	EXPORTS
Europe	$281,091 002	$901,014,786
North America	81,287,474	127,125,929
South America	85,859,245	30,748,846
Asia	85,381,158	41,561,531
Oceanica	23,365,132	19,979,555
Africa	6,786,017	16,097,959

Societies

The following recent meetings are noted

Iowa —Austin Flint Medical Society, Iowa Falls, July 12 and 13, Iowa Union Medical Society, Cedar Rapids July 13, Southwestern Minnesota Medical Society, Sibley, Iowa, July 14

Kansas —Academy of Medicine, Topeka, July 11

Kentucky —Lexington and Fayette County Medical Society, Lexington, July 11

Massachusetts —Franklin District Medical Society, Greenfield, July 12, Hampden District Medical Society, July 19

Nebraska —Elkhorn Valley Medical Society, Norfolk, July 12, South Omaha Medical Society, July 9

New York —Jefferson County Medical Society, Watertown, July 9 Oneida County Medical Society, Utica, July 12, Ontario County Medical Society, Canandaigua, July 12, Wayne County Medical Society, Lyons, July 12

Pennsylvania —Berks County Medical Society, Reading, Lackawana Medical Society, July 12, Lycoming Medical Society, Williamsport, July 8, York County Medical Society, York City, July 7

Vermont —Union Medical Society, Bennington, July 13

Wisconsin —Brainerd Medical Society, Milwaukee, July 13

Louisville

EXAMINATIONS —Secretary McCormack of the State Board of Health held the examination as provided by the recent law regulating the practice of osteopathy, and but one woman presented herself to stand the test The annual meeting of the State Board of Pharmacy was held in this city last week for the purpose of examining candidates for the practice of pharmacy in the State Quite a large class took the examinations

CATTLE.—Since the convention at St Louis, some time ago, the attention of the State Board of Health has been directed especially to the prevention of the shipment of cattle through the State without proper examination There is a Government inspector in the city who is doing specially good work and is guarding against the importation and transportation of diseased cattle There has been some ground for complaint on the part of Indiana and Illinois because of diseased cattle being shipped through Kentucky, and to guard against this an important meeting of the Health authorities, State and local, was held last week to look into the matter and adopt regulations The following were present County Judge Gregory, M. K Allan, Health Officer, J N McCormack, Secretary of State Board of Health, Wm Bailey of the State Board and Geo W Griffiths, B W Smock of the County Board and [illegible] C Eisenman, State Veterinarian Under rules adopted [illegible] Eisenman will examine all cattle which pass through the State and none will escape that are diseased

Philadelphia

SURGEONS OF THE KEYSTONE S[illegible] BEING D[illegible] AGAINST —There a great many surgeons in the [illegible] Army from Philadelphia and the State at [illegible] front Owing to the laws of [illegible] States the [illegible] geons in the Volunteer Army are the [illegible] same pay as a captain. [illegible] prevails, and therefore [illegible] take rank and draw pay as first [illegible] considered that the Commonwealth of [illegible] of the first States [illegible] its national guard [illegible] it is a source of [illegible] upon the same [illegible] as those [illegible] reported that [illegible] has submitted [illegible] regarding the matter.

A GLO[illegible]

by the different hospitals of the city for July 4 Howard Hospital Burns 2, contusions 4, gunshot wounds 1 Episcopal Hospital Burns of the hands, face and neck 11, gunshot wound of finger 1, lacerated wound of finger 1 St Joseph's Hospital Burns 3, lacerated wound of finger 1, laceration of hand 1. Presbyterian Hospital Burns of hands and face 10, lacerated wound of finger 1, dislocation of shoulder from discharge of gun 1 German Hospital Burns of hands, face and neck 11, gunshot wound of finger 1, lacerated wound of finger 1 Jefferson Hospital Burns 2, gunshot wound of forearm 1, gunshot wound of hand 1 Medico chirurgical Hospital Burns 4, contusions 2 Polyclinic Hospital Burns 5, lacerated wounds 5, fracture of humerus 1

How the Mortality of Cities is Increased —No better exemplification of the increase in the death rate of cities is needed than to study the enormous increase in the number of cases of cholera infantum as observed during the summer months For instance, in Philadelphia there have been 720 deaths, of which 185 were caused by cholera infantum alone During this same period 27 deaths from sunstroke occurred, so that, taking into consideration the different agents which give rise to the increased death rate, we must assign it first to the intense heat which has prevailed, together with rapid fermentation which set up these digestive disturbances If it were possible to place a medical inspector in each home during the season of intensely hot weather, who could give proper advice regarding the judicious use of sterilized and proper foods, the death rate of any city could be improved The average person, however, will go on from day to day and give the child uncooked milk, candy, sour potatoes, or probably decayed fruit, and if the child happens to be teething nothing else is needed to bring on an attack of cholera infantum and consequent death It is hard to convince the average ignorant mother of the dangers attendant upon the administration of improper foods, for the doctor will readily detect that the attention of the patient is lost before he gets through explaining technical terms which she can not comprehend So the death rate of cities will continue to be high for some time to come The principal causes of death were Cholera infantum 185 deaths, tuberculosis 41, inflammation of stomach and bowels 38, marasmus 32, Bright's disease 22, old age 28, heart disease 25, sunstroke 27, cancer 20, apoplexy 17, paralysis 16, dysentery 4, diarrhea 2, convulsions 4 Of the total number it shows an increase of 214 over last year for the same period, 393 were in children under 5 years of age

Infectious Fevers —This week diphtheria 11 deaths, 49 cases, scarlet fever 2 deaths, 17 cases, typhoid fever 13 deaths, 51 cases Last week diphtheria 10 deaths, 56 cases, scarlet fever no deaths, 26 cases, typhoid fever 10 deaths, 58 cases

Hot Weather Effects —July 4 the temperature at 5 a m was 76 degrees, 8 a m 83 degrees, 12 m 93 degrees and 2 30 p m 99 degrees The humidity was excessive and finally culminated in a hail storm So intense was the heat that forty one prostrations were reported, of which seven proved fatal Children suffered most and the effects are shown by the increased number of deaths from cholera infantum

Personal —Dr Albert E Roussel of Philadelphia, who holds an important position in the faculty of the Medico Chirurgical College, sailed last week for Europe, where he will remain for several months While away he will attend clinics at Vienna, Berlin, London and Paris

Medical Board —The next meeting of the Medical Board of Pennsylvania will be held in Philadelphia, December 12.

THE PUBLIC SERVICE

Assignments etc., of Medical Officers —To the 1st Army Corps Major General Brooke, at Chickamauga Park Ga Acting Asst Surgeon Sidney J Myers, from Louisville Ky To the 2d Army Corps Major General Graham at Camp Alger Va Majors Edward Martin and M C Wyeth brigade surgeons and the following acting assistant surgeons, all from Washington, D C Chas L Baker Howard H Baily Wm P Cornell George L. Hicks Chas G Eicher and John A McKenna To the 3d Army Corps Major General Wade at Chickamauga Park Ga Major Louis Brechemin, U S A Major R Emmett Griffin chief surgeon and Major Chas E Ruth brigade surgeon To the 4th Army Corps Major General Coppinger, at Tampa Fla Lieut Bailey K. Ashford, U S A from Ft St Philip La and the following acting assistant surgeons Julius A. Escobar Richard Wilson Frank W Jay John S Donaldson Eugene T Hancock and Wm E West To the 5th Army Corps Major General Shafter, at Santiago, Cuba from Tampa or via Tampa, Fla. Major John G Davis, Surgeon 7th Regiment Volunteer Infantry and the following acting assistant surgeons Maynard G Burgess Poger P Ames Wm B Winn Eduardo C Poey D T Laine, S M Gonzalez, all from Tampa, Fla J Stebbins King from Decatur Ill Chas T Newkirk from Washington, D C J A. Dunwoody from Cripple Creek, Colo Allen P Ebert from Atlanta, Ga., and Chas L Le Roux from Pass Christian, Miss To the 7th Army Corps, Major General Fitzhugh Lee, at Jacksonville Fla. Lieut James S Wilson U S A To the 8th Army Corps Major General Merritt, Philippines Major Geo. F Shiels, brigade surgeon while Capt Thomas U Raymond, U S A., has been relieved from duty with the expeditionary force reporting to the commander of the Dept of California To the general hospital, Ft Monroe Va Major Lewis Schooler, chief surgeon from one of the divisions of the 3d Army Corps, and the following acting assistant surgeons Robert E Bell, Carl H Andersen and E W Pinkham all from Washington, D C, S Melville Waterhouse from Ft Myer, Va John S Fogg from Biddeford Maine A. W Williams from Gainesville, Ga., and Berwick Bruce Lanier from Baltimore, Md To the general hospital Ft Myer, Va Acting Asst Surgeon Joseph J Curry from Boston, Mass To the general hospital Key West, Fla. Acting Asst Surgeon Geo R Plummer from Washington D C To the Leiter general hospital Chickamauga Park, Ga Acting Asst Surgeons Joseph C De Vries and Dudley W Welch from Washington D C

Major H H Arthur chief surgeon, has been ordered to New York City for the purpose of outfitting a hospital ship

Resigned —Lieut Thos L Jenkins, Asst Surgeon 8th Massachusetts Infantry, on account of disability

CHANGE OF ADDRESS

Allen C J from Peterboro N H to East Barnard, Vt
Bower, A. L., from 258 S W Temple to Progress Bldg, Salt Lake City, Utah
Benson J A, from 103 State St to 833 Washington Blvd., Chicago
Bailey, J from Denver to Florence, Colo
Brewster, B H, from Euclid to Hooker, Pa
Cosgrove, T M, from Auburndale to 3327 Monroe St Toledo, Ohio
Carpenter, J W, from Cincinnati Ohio, to Omena, Mich
Davidson, S S, from New Castle to Wampun, Pa.
Dicken, H W from Ann Arbor to Romeo, Mich
Fanner J C from 2022 Portland Ave to 1315 Clinton Ave, Minneapolis Minn
Flood John from 297 N State to 287 W Erie St, Chicago
Goffe, J Riddle, from 22 E 85th St to New London Conn
Haines W D, from 583 to 1606 Freeman Ave, Cincinnati, Ohio
Hays T D, from 257 S Wood St to 852 Randolph Chicago
Hedden, C H, from Chicago Ill, to Charles City, Iowa
Hart, M from Denver to Grand Lake, Colo
Kaull, W M, from Ohio Ill, to Princeton Ill
Lebrecht, J C, from 14 E St to 900 S 4th St Louis, Mo
McGahan C F, from Aiken S C, to 24 W 57th St, New York
Mather E, from Paterson to Jersey City N J
McGready, J H, from Chicago, Ill to Independence Iowa
McCreery, L M from Rocky Ford to University Park Colo
Neilson W H from 83 Metropolitan Blk to 104 Garfield Ave, Milwaukee Wis
Nunstedt, S H, from Keokuk to Rudd, Iowa
Osborne G, from 161 Michigan St to 27 N Clark Chicago
Pirosh B from 195 W 13th Pl to 43 McAllister Pl Chicago
Ruth, C E from Keokuk Iowa, to 3d Army Corps, Chickamauga, Ga
Reun T H from 227 Townsend to Packerton, Ind.
Sternman, W F, from Louisville, Ky to Evansville Ind
Searles L M from Kansas City, Mo to Mount Ayr, Iowa
Somers L S from Philadelphia to Analomink Pa
Somers G B from 183 Larkin St to 1084 Mission, San Francisco, Cal
Toron, M from Palace Hotel to 131 N Clark Chicago
Thompson A. M from Portland Maine to Snowville, N H
Underwood A M from Lancaster Pa, to Grove Beach Conn
Wilson, J B, from Mt Vernon Ind., to Canon City, Colo

LETTERS RECEIVED

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ORIGINAL ARTICLES

INDOL ITS RELATION TO PROLONGED SUPPURATION AND LARDACEOUS CHANGE[1]

Presented to the Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association, held at Denver, Colo , June 7-10, 1898

BY F LEONARD VAUX, M.D , C M , Trin
MEDICAL SUPERINTENDENT ST LUKE'S GENERAL HOSPITAL
OTTAWA, CANADA.

In demonstrating the proteids of food as the normal, and therefore the most constant factor in the production of indol, one must not overlook the disintegration of albuminoid tissue To do so would be a serious omission, for the recognition of an intense indican reaction as a valuable aid in diagnosis, and its general adoption as such by the medical profession must rest largely upon its relation to suppuration and allied degenerative processes, as in the necrosis of syphilis or carcinoma Indol is set free whenever any of the following processes exist 1 Suppuration in a closed cavity 2 Continued suppuration with a free outlet 3 Ulceration or necrosis of tissue

As regards the intensity of an indicanuria from either of the first two causes, three factors must be considered *a*, the length of time in which the purulent fluid has been secreted, *b*, the adaptability of the enclosing surfaces for absorption, *c*, the extent of surface available for absorption

1 In the case of a sac normally secreting a serous fluid, simple increase in that secretion would not indicate indol formation And inasmuch as transformation to a typic purulent secretion is a matter of several stages, it is but reasonable to expect at first only a slight indicanuria And further, when pus is fully formed, the indican reaction will become more and more intense in proportion to the length of time that suppuration persists This is especially true with regard to the empyemas of childhood, the reports of my examinations in connection with which are here given

H G , four ounces pus, urine loaded with indoxyl pot. sulph (indican), B I , five ounces pus, urine loaded with indoxyl pot. sulph. , R. J , ten ounces pus, urine loaded with indoxyl pot. sulph. , E C , eight ounces pus, urine loaded with indoxyl pot sulph. (five months' duration), K M , twenty four ounces pus, urine loaded with indoxyl pot. sulph , L I , ten ounces pus, urine loaded with indoxyl pot sulph , B M , eight ounces pus, urine loaded with indoxyl pot. sulph. , F N , seven ounces pus, urine loaded with indoxyl pot. sulph. , G B , seven and a half ounces pus, urine loaded with indoxyl pot sulph

In addition to the above, I have examined a large number of cases of broncho pneumonia, lobar pneumonia, and simple pleurisy with effusion, yet never have I found in any of these a heavy deposit of indigo blue as in empyemata I have never seen but one single case of pythorax in children in which the presence of a marked indoxyl potassium sulphate reaction, did not accurately foretell a large amount of pus In the one exception mentioned, the previously seropurulent fluid had become purulent but a couple of days before operation

One case in which the accuracy of this test was upheld has fixed itself strongly upon me B S, operated upon for empyema, and later the sinus closed very rapidly Temperature had been normal for some time, but rose suddenly and retention was feared Before aspirating through the scar, a test case was made of the indoxyl reaction, and upon examination none found A diagnosis of "non-retention" was then made and proven correct by aspiration as well as later developments, for the classic symptoms of typhoid fever soon appeared and a Widal reaction was obtained

Indol and empyema of the gall bladder —I C , aged 32 , history of severe colicky pains in right hypochondrium together with jaundice, fever, chills and general malaise On palpation a distinct mass could be made out occupying site of gall bladder A heavy deposit of indigo blue was obtained from the urine and a diagnosis of empyema of the gall bladder was made, the indicanuria ruling out a collection of gall stones In these cases it will be necessary to have the bowels thoroughly evacuated, else indol formation in the intestine may be excessive and misleading Such a case has come under my notice

Indol and abscess of the liver —I B , all physical signs of liver abscess Indoxyl reaction intense Upon operation multiple abscesses found and large amount of pus evacuated

Indol and perinephritic abscess —*a* M S , perinephritic abscess rupturing into pleural cavity , large amount of pus evacuated , indoxyl reaction heavy *b* T C , supposed perinephritic abscess , there being temperature and a tumor Indoxyl examination showed only a trifling increase over normal, such as would result from digestive disorders, but not such as would come from pus The diagnosis of renal calculus being therefore made was found upon operation to be the correct one *c* I B , pyonephrosis and perinephritic abscess , very marked indicanuria

Indol and bronchiectasis —*a.* E F , typic physical signs , very foul odor of breath , indoxyl reaction intense Upon aspiration of cavity two and a half ounces of pus were withdrawn *b* S B , bronchiectatic cavity , odor of breath intensely fetid , purulent matter coughed up , indoxyl pot. sulph. heavy

Indol and subdiaphragmatic abscess —F T , high fever, 104 to 105 degrees F , great pain over diaphragm in breathing, together with extreme tenderness on palpation There being no indicanuria a subdiaphragmatic abscess was excluded No pus was found upon aspiration, and the following day the temperature became normal

Note.—I am indebted to Dr A G Gerster, Chief of the Surgical Staff, Mt Sinai Hospital, New York, for permission to use the above statistics

2 Continued suppuration with a free outlet does not present any very distinguishing feature In time, however, as solid tissue, such as bone, becomes worn away the elimination of indol is most intense

In both forms of suppuration the production of indol will be great, but [illegible] nally [illegible] ed in the urine will d[illegible] the [illegible] istics and size of th case of suppurative peritonitis, where pus is free in the abdominal cavity, the indicanuria will be inky in its intensity and in a comparatively short time, while the same amount of pus in the pleural cavity would only produce a similar degree of indicanuria in from six to ten weeks, or perhaps not even then Assuming, for argument, a case of chronic Pott's disease with marked suppuration, by what chemic or physiologic means is indol formed and eliminated as indoxyl? The answer is made doubly difficult by our lack of knowledge as to the arrangements of atoms in the primary albuminoid molecule, a point which even the most modern researches have failed to elucidate E and H Salkowsky, who have given so much time to the study of indol, have paid special attention to this, arriving at the following conclusions "That in the putrefaction of albumin indol is not immediately liberated from the proteid molecule in a free condition, but that an intermediate product is formed, which is gradually decomposed by the further action of bacteria This intermediate product is not, however, peptone, the quantity of which throughout the process of preparation is small and in the later stages seems entirely to disappear" Baumann, who first advanced the theory, held that the intermediate product was soluble in a mixture of alcohol and ether From this substance (which is not biuret) we may reasonably assume that tyrosin is formed, it being the mother substance of indol But we still find ourselves confronted with the questions, what is the antecedent of tyrosin, and, where does tyrosin become changed into indol? To even approximate an answer it is essential to consider the relation existing between the liver and tissue metabolism Of necessity, our knowledge in this respect will be limited, for there comes a point when the processes of living tissue can not be reproduced in the test tube or crucible

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[1] This paper was presented under a nom de plume and was awarded the gold medal offered by Trinity Medical College Alumni Association, Toronto The judges were Dr Wyatt Johnson. Dr Adami and Dr Rutlan, all of Montreal

Nevertheless, from the products of metabolism we may learn much about the source Urea and leucin, as allied products, may be of some value in these investigations Since the synthetic production of urea it has been closely studied and many theories formed as to the site of its origin Being such an important urinary constituent it was first believed to be a renal product, next the muscular tissues were supposed to be its seat, owing to its increase after exercise, and only lately has it practically been accepted as a product of the liver When, however, we speak of the liver as the source of an albuminoid product, we really mean that this substance or its antecedent is deposited there by the blood, undergoes certain reducing processes and is again set free to be eliminated

Consequently we presuppose a mother substance, bearing to urea, leucin and tyrosin the same relation that indol does to indoxyl, or indican to indigo blue, and like indoxyl circulating in the blood, probably in direct connection with the leucocytes As a sequel to this hypothesis it must be assumed that the liver, by its reducing power, normally separates tyrosin from its unknown antecedent and finally indol is set free by a continuation of the same process Most important as substantiating this view, are the researches of M. Nepveau and M Villiard, distinguished French scientists of Marseilles and Paris respectively, who have shown that from the maceration liquid of certain pathologic specimens, indigo blue may be precipitated

Nepveau first made his observations on a very limited number of cases, and after noting the results in the *Marseilles Médicale*, turned over the subject to Villiard for further investigation The results obtained I append, together with his notes

"Nepveau has demonstrated that by examination of the alcoholic maceration liquid of organs, one may find indol or indican a considerable time after death, in one case, in the liquid from a subject after several months, the cause of death being hematuric biliary fever The liquid in this case has been changed four times The alcoholic, maceration liquid of other organs than the liver did not give the reaction I have been able by nitro-prusside of soda and 2 minims H_2SO_4, to demonstrate indol in the tumors of different cases One should allow the liquid to remain twenty-four hours, then at the bottom may be seen an intense blue coloration The liquid of maceration has been absolute alcohol, and we have obtained the following results

"1	Liver	Biliary hematuric fever, very intense (Nepveau)
2	Liver	Pulmonary tuberculosis, very intense
3	Liver	Death from trauma, very feeble,
4	Liver	Uremia, very feeble
5	Liver	Uremia, very feeble
6	Liver	Pylephlebitis, very intense
7	Liver	Broncho pneumonia and grippe, feeble
8	Liver	*Fatty degeneration*, intense
9	Liver	Atrophic cirrhosis, *nil*
10	Liver	Cholera, intense
11	Liver	Beri beri, feeble (Nepveau)
12	Kidney	Uremia, intense
13	Kidney	Uremia, *nil*
14	Kidney	Biliary hematuric fever, *nil*
15	Spleen	Biliary hematuric fever, *nil*
16	Spleen	Broncho-pneumonia and grippe, *nil* "

"One may see by these remarks, that indol has been found in a number of cases These researches are, however, on entirely too small a number of cases to enable us to arrive at precise facts as to the constant presence of indol in each pathologic organ It will therefore always be necessary, in order to obtain an exact result, to know in each case 1, the exact size and weight of the anatomic specimen, 2, the quality and strength of the liquid used, 3, the number of *macerations* "

"In examination of the maceration liquid of four successive macerations of numbers two and six, we have found in each maceration a diminution of the intensity The reactions from kidneys, spleen and lungs are not constant, and will not permit of conclusions But it will be admitted that the liver gave a pretty constant reaction, viz a characteristic indigo blue precipitate "

"The solution used in oxidizing the maceration liquid is as follows Place in a test tube 5 c c of the alcoholic liquid of maceration (of a carcinoma of the liver, for example), add to it nitro prusside of soda 5 parts, and in addition 30 parts of a solution of caustic soda, some drops of crystallized acetic acid and 4 drops concentrated sulphuric acid, make up with water to 100 There will be immediately produced on contact of the two solutions and the liquid, the coloration of indican, and very strongly so in twenty-four to forty-eight hours "

Not having as yet made use of the above solution, I can not state its powers of oxidation, but should judge them to be quite marked

The results quoted above, while apparently most important and convincing, must be confirmed by pathologists from all sections of the country I myself have not been as yet fortunate in securing pathologic specimens from cases of carcinoma or prolonged suppuration, but hope before long to be able to report results of such examinations

We may assume, then

1 That suppuration, or rapid degeneration of tissue, causes an increased amount of indol to be deposited in the liver

2 That in such cases there will also be an increased elimination of indican

3 That postmortem we may, by simple extraction with absolute alcohol, take from the liver the excess deposit as its oxidation product, indigo blue

I lay particular stress on these points, bearing as they do upon the question of the nature of that peculiar tissue change known as lardaceous degeneration, and next to be discussed

Indol in relation to lardaceous change —It is safe to say that the tissue metamorphosis commonly known as waxy, amyloid or lardaceous degeneration, is today almost as great a mystery to pathologists as in the earlier years of the century, when Virchow wrote about it It is, however, worthy of note that a revival of interest in this subject is being manifested, both in Europe and our own continent, much careful work being done in government clinics and private laboratories In Europe Virchow, Krakow, Czerny, and in England Howship Dickinson, are conducting elaborate investigations, while in Canada and the United States, private enterprise is being enlisted Three factors render research difficult

1 It is not always possible to say definitely during life, that lardaceous changes are actually going on, for even when there is good reason for believing that the kidneys may be involved, waxy casts may be absent from the urine

2 The cessation with death of liver metabolism leaves us with but little to work upon

3 Even when, with difficulty, the lardaceous material has been isolated from the liver, it responds to so few chemic tests as to give small chance for experiment

As an offset to these disadvantages, it may be said that the etiology has been limited to two causes degeneration of tissue and suppuration, whether these occur from bacterial activity, tuberculosis, syphilis or malignant disease

What, then, has been the result of a century of work? This can best be answered by the following statements

1 Previous to this century, the conditions under discussion had been noted, and the term "lardaceous" applied

2 In the early years of the century great attention was paid to this condition by the Edinburgh school, and by them the term "waxy" applied to it

3 In 1853, Virchow discovered the peculiar bright blue reaction obtained from the corpora amylacea upon the application of iodin and H_2SO_4 From its similarity to the starch reaction with the same reagents, he named it "amyloid"

4 Later Kekule, Friedrich Schmidt and others demonstrated its nitrogenous composition and proved it to be closely allied to the albuminoids, and not starchy

5 Kühne submitted degenerated organs to gastric digestion for a long period, finally succeeded in isolating thus the lardaceous material, and confirmed the views of Kekule

6 Dickinson, noting that in long continued suppuration the lardaceous changes were more intense when free outlet was afforded for the pus, advanced the theory that in the purulent discharge alkaline salts were carried away, the resulting fibrin being the morbid material

7 Ehrlich found that anilin dyes, notably alizaria blue and indo-phenol blue, were decolorized by the normal tissue of a lardaceous liver, but unaffected by the degenerated portions

8 Czerny claimed that the white blood cells contain the precursor of the lardaceous material

9 Krakow and others have undertaken experimental researches by inducing suppuration in animals, that the lardaceous changes may be studied in various stages

Many more observations and experiments might be quoted, but those given outline fairly the trend of thought Before proceeding to further discuss the nature of this morbid material it might well be noted, that the theory of an absolute retrograde metamorphosis, as opposed to an infiltration of new material, is no longer held On the other hand, it is freely acknowledged that whatever material be brought to and deposited in the liver, it there undergoes an almost complete transformation by the action of the liver protoplasm Thus the question as to whether lardacein is entirely a product of degenerated cell action, or entirely an infiltration, need not longer be discussed, for undoubtedly it exists as a result of both causes, the essential factor in its formation, its precursor, that to which the color reactions are due, being deposited by the blood, while on the other hand, the nitrogenous element, that which yields tyrosin and leucin, is due to degenerated cell action Thoma says "It is quite possible to conceive that a preliminary stage may exist, in which the amyloid antecedent circulates in the blood, finally to pass out into the tissues and be converted into amyloid by the action of the cells" Ziegler also believes that "amyloid-forming" material pre-exists, and its deposit induced by the lowered vitality of the whole body, is due to suppuration or dyscrasia So too Czerny, whose researches will be referred to later, believes that the leucocytes convey the amyloid precursor

Granting that the primary and most important factor is the deposit in the tissues by the blood of an "amyloid-forming material," what is the nature of this mysterious substance? I would here with much hesitation advance the theory that this deposit is but a derivative of indol, which retains through all changes its power of easy oxidation into indigo red and blue

We may now note the chemic properties of lardaceous material Lardacein has the chemic formula $C_{53\ 6}$ H N_{15} S and O 24 4 per cent, being thus closely allied to albumin and giving the xanthroproteid reaction, as also that of Millon It is dissolved out with difficulty, and only by the concentrated acids and alkalies, being then converted into an acid or alkali albuminate On boiling with acids it yields leucin and tyrosin

The following color reactions can be obtained Reddish-brown with iodin, violet or blue by iodin plus H_2SO_4, red by methyl anilin, red by amber green Of all the above color tests, those with iodin are the most characteristic and important, being constant and typic Following out the hypothesis advanced with regard to the relation between indol and the primary deposit, we must look upon the mahogany red as nothing more nor less than the [illegible] rati [illegible] indigo red from the tissues, through [illegible] dizing powers of iodin, further [illegible] blue being afforded by the concentrated sulphuric acid used in the second stage of the reaction.

In this connection the well-known blue reaction obtained from albumin in the presence of strong HCl and oxygen, is of interest Here too we may reasonably assume that the action of the HCl is to set free from the albumin a derivative of indol, from which in turn the oxidizing power of the atmosphere soon liberates indigo blue Occasionally also when using Heller's test, in urines loaded with albumin, the blue coloration will appear Halliburton first called attention to the fact, as a possible source of error in testing for indican As a matter of fact, it will be found that such a specimen is actually loaded with indican, the fuming HNO_3 playing the same rôle as the combined action of the weaker solutions, and effecting a double oxidation, indol into indoxyl potassium sulphate, and this into indigo blue

But striking as the color reactions of lardaceous degeneration may be, and while to me they form the strongest evidence in support of the theory advanced, other proof must be adduced, before such a connection can be accepted as even possible These other points of similarity are here arranged in parallel columns

	The Lardaceous Material	(*The derivative of*) *Indol*
1	Occurs in chronic suppurations	A marked and persistent elimination of indol is seen in such cases
2	Yields tyrosin	Is a product of tyrosin
3	Is deficient in potassium	Shows a marked affinity for potassium
4	Seat of election is the liver	Indol is deposited in the liver in suppuration
5	Its primary factor is deposited by the blood	Circulates in the blood and is there oxidized
6	Gives red or blue color change with oxidizing agents	With oxidizing agents yields indigo red and blue

1 About this little need be said, it being acknowledged by all writers that in chronic suppurations, or other disintegrations of tissue, indol is markedly and constantly eliminated, while the very same processes are being recognized as the only factors in lardaceous change In other words, there is etiologic unity as regards the primary factor of lardaceous material, and the indolic pigments excreted in the urine

2 At present not much can be said about the relation of tyrosin to these changes It may be that in this production of leucin and tyrosin from lardacein, we have a hint of certain important proteolytic functions, but the chances are that the presence of these two rare end-products can be accounted for by the destruction of the nitrogenous element in lardaceous change, the portion produced by degenerate cell action

3 As regards the deficiency of potassium, it must be admitted that unusual attention has been directed toward this condition Dickinson and Marcet make many observations on this point, the former going so far as even to base a new theory upon it That there is a marked difference in the amount of potassium is best shown by the statistics Dickinson himself gives In seven healthy livers potassium = 209 In seven lardaceous livers potassium = 169 Noting also that in cases of continued suppuration where free outlet for the pus was afforded, the resulting lardaceous changes were more extensive, he became convinced that the fibrin resulting from this loss of alkalinity, being no longer held in suspension, was deposited in the affected organs There is no need of discussion of this theory, Dickinson himself having abandoned it But may there not be another explanation of a fact which has been dwelt upon by nearly all modern writers on the subject? It seems possible that in the affinity of indol to potassium, we have an attempt of nature to repair this loss While we have not as yet discovered an exact relation between lardaceous material and the indigo group, yet already enough striking similarities have presented themselves to warrant us looking closely into the matter, and of these, this deficiency in potassium, which was so marked as to have led Dickinson into advancing a new theory, may well claim once more our attention, and demand our careful investigation

4 While it is true that, given the proper etiologic facts, lardaceous change will go on wherever there is blood supply, nevertheless it is a well known fact that the liver contains in each case by far the greater amount of this morbid material, so much so, in fact, that this organ is the one usually employed in experiments Statistics to this effect are given by Kyber, Virchow, Dickinson and others, while the fact is in accordance with the law, "Lardaceous infiltration of organs is in direct proportion to their blood supply," still, there is another and more important reason I refer to the proteolytic function of the liver

The power of proteolysis is being dwelt upon more and more by physiologists, and certainly it is of the greatest importance to all students of internal medicine In the various changes which indol undergoes it undoubtedly plays a large part Normally the process is probably as follows Indol having been produced ultimately from the decomposition of proteid material, is absorbed and carried into the portal circulation Here, under the combined oxidizing, reducing power of the blood and liver cells, it becomes indoxyl, a portion of which, either as such or in an altered form, remains stored away, as it were, in the liver That which goes on again into the blood stream is eliminated in the feces and urine The proof that indoxyl or its derivative remains in the liver, may be found in the researches of Nepveau and Villiard, quoted above, by which they obtained indigo blue by simple maceration of livers These livers were from the very type of case which during life would show a marked indicanuria

Accepting then this view, as representing the normal condition of things at the commencement of a suppurative process, it follows that, later on in the course of the dyscrasia, there will result a generally lowered vitality, affecting ultimately all finer natural processes, and producing in consequence diminished proteolytic powers in the liver Hence there will be inability to properly oxidize or reduce indol, and pass the resulting product in part out into the general circulation Thus there will remain in the liver an unusually large amount of an improperly reduced and indigo forming substance, constantly increasing, and to which there will be added, as a further result of the impaired proteolytic and eliminative power, nitrogenous waste and degenerate cell products From the union of all these there would result, in course of time, that which we know as lardaceous material

But most important of all are the characteristic color reactions of lardaceous material We know that the application of a watery and entirely colorless solution of iodin and potassium iodid to lardaceous organs, produces at once in the degenerate portions a mahogany red tint which has never yet been satisfactorily accounted for, but bears the closest resemblance to indigo red The fact that this pigment, rather than indigo blue, should appear primarily, is of no account, inasmuch as both have the same chemic composition, there being merely a different arrangement of the molecules The same phenomenon occasionally occurs in urine analysis, indigo red being thrown down and later under atmospheric oxidation becoming indigo blue

Directly bearing on this question are the following classic observations of Schunck

"1 Two distinct periods may be observed in the decomposition of indican during the first the indigo blue is the chief product, during the second red and brown coloring matters with but little indigo blue are seen 2 Let a watery solution of indican be boiled for some time and it then yields by decomposition not a trace of indigo blue, but only indigo red 3 If it be boiled as before, but with the addition of alkalies, it then gives neither indigo blue nor indigo red, but only a brown resinous matter, indiretin"

The second color change, that resulting from the application of strong H_2SO_4 to the portions already stained red, is the appearance of a dark violet blue, occasionally a blue black, and very rarely a bright blue Again the parallel is striking, the oxidizing power of the concentrated H_2SO_4 altering the molecular arrangement and converting indigo red into indigo blue Dickinson, it is true, has explained this reaction upon another basis, that of a combination between the sulphuric acid and iodid of potassium, resulting in a precipitation of iodin which blackens the tissues But it is to be observed that although this view was first advanced in his "Treatise on Albuminuria," published in 1881, it has not as yet met with general acceptance, nor does it help in any way to explain the previous color reaction—mahogany red

The effect of strong alkalies must be noted here To obtain lardaceous material for study, an affected organ is treated with caustic potash, the infiltrated portion is dissolved out and a white, flaky precipitate obtained by subsequent acidulation This precipitate will not respond to iodin or H_2SO_4 in the usual manner, but gives only a fawn color as does a similar precipitate from a healthy liver (Dickinson) So, too, if liq potassæ be poured over lardaceous material *in situ*, before ever that identical portion has been subjected to reagents, it loses then and there its power of giving the iodin reaction Hence the liquor potassæ, not the acid, affects it

Now note the effect of boiling a watery solution of indican with alkalies (liq potassæ) as described by Schunck, *vide supra* Then compare the reaction there obtained with that just described In both cases we see the power of yielding an indigo red tint destroyed In short, another indigo producing substance has been disorganized by liquor potassæ

The relation of indigo blue to indigo white is of great interest A solution of indigo white or indigogen when exposed to the air gradually combines with oxygen and deposits indigo blue On the other hand, indigo blue, though strongly resisting all chemic agents, may be reduced to indigo white by fermentation Concentrated sulphuric acid dissolves indigo blue without destroying its color, but strong liquor potassæ completely destroys its blue In the reduction from blue to white one atom of H is gained After liquor potassæ has been added and the blue color destroyed the tint can not be restored But if a reducing agent is present and an acid be added, a grayish-white substance is deposited in flakes, to which the name indigogen or indigo white is applied (Schunck)

In this experiment, taken in conjunction with our previous observations, do we not find confirmation of the hypothesis advanced, viz, that a member of the indigo group is an active factor in lardaceous change? Thus, the flaky white material dissolved from degenerate organs and finally precipitated as such, bears a strong resemblance to the indigogen or indigo white just referred to But where is the reducing agent which it has been stated is necessary to complete the process? This may be found in the action of the liver protoplasm itself, a reducing agent of no mean power, and which in spite of advanced degeneration must necessarily retain some power, for we know that a solution of alzarin blue or indo-phenol blue (an indigo derivative) is decolorized by living hepatic protoplasm, the liver cells possessing an inherent power of reduction either by themselves or through the agency of certain ferments This is well expressed by Gamgees "The forces peculiar to protoplasm, unknown to us but acting similarly to heat, increase the intramolecular movements of the atoms in such a way that a loosening or splitting of the molecule occurs and an aggregation of the oxygen is made possible—primary oxidation" We term this force "the proteolytic power of the liver," and Hunter has pointed out that its variations may in part be recognized by the variations of urinary pigments

In contradistinction to the reducing power of alkalies as liq potassæ, may be seen the oxidizing power of certain acids, as HCl, by the following observation of Dickinson "While the liq potassæ added to lardaceous material prevents color reagents, HCl in weak solution increases the power of the lardaceous material to respond to iodin, the resulting tint being a deeper and more durable red" What is this but the increased liberation of indigo red due to oxidization by HCl as seen ordinarily in the test tube?

Finally, the experiments of Czerny, to which reference has been made, are of the greatest practical importance Producing lardaceous change in the organs of animals by inducing suppuration, he was led to submit the pus cells to the combined action of iodin and H_2SO_4 To his surprise the two reactions of lardaceous tissue were reproduced Further experiments showed also that in the leucocytes of the blood similar reactions might be obtained In his own words "The appearance in the pus of cells giving the characteristic amyloid reaction, the discovery in the blood of the cells and the appearance later of amyloid degeneration in the organs are facts which speak for one thing, viz, that through the leucocytes is carried a substance which must be regarded, not as a glycogen but as a forerunner of amyloid This being my view it becomes obligatory to answer the question Is the amyloid substance itself prepared in the blood and from it deposited in the tissues?"

The acceptance of this view will go a long way toward proving that an indigo-producing substance and not a mere tissue characteristic is the basis of the well-known color changes For we know that indoxyl circulates in the blood, is produced in excess in suppuration and may be extracted from the liver (as indigo blue), where death has resulted from the cause It remains but to demonstrate that the red and blue colorations of the so called amyloid reaction are indigo red and indigo blue and nothing else But to prove this beyond cavil will require much time and numberless experiments Our researches, however, will be aided by knowing that amyloid changes may be produced experimentally in animals in from four to six months

The latest information upon the whole subject of indol production is from the able pen of Dr C A Herter Two new facts are given one that there is in the blood that which will very quickly oxidize or reduce indol into some other form, the other that in cases of chronic indol poisoning the chief changes found were in the liver, the capillaries of the lobules being much congested and the liver cells the seat of pigmentation

Do not these observations bear out in part the theory already advanced in this article?

SURGERY OF THE LUNG

The Oration in Surgery Delivered at the Forty ninth Annual Meeting
of the American Medical Association held at
Denver Col June 7 10 1898

BY J B MURPHY, M D
CHICAGO ILL

(*Continued from page 165*)

SURGERY

We will first consider accidents to and operations on the lungs Then we will consider the diseases of the lungs and the applications of surgical procedures to them We will also consider the general pathologic and surgical principles underlying operative procedures on the lung I propose the following proposition without argument The important diseases of the lungs are all due to foreign bodies, either mechanical or bacterial Therefore viewing the question from this etiologic standpoint, in the present state of medical science operative procedures should be habitually performed The general principles are 1 To place the tissue in such condition as to increase resistance to infection 2 To remove *a*, foreign bodies, *b*, the products of infection, which in turn are foci for further infection, *c*, tissue injured beyond repair, which constitutes foyers of new infection

Lung operations divide themselves into two classes 1 Those that do not perforate the visceral pleura That class of operations aims to convert the hard-walled cavity into a collapsible one The necessity for these operations arises from the physics of the lung The indication is collapse, and is met by *a*, an opening in the soft parts, allowing air to enter, *b*, removal of bony parts, allowing air to enter and the wall to collapse *c*, collapsing the lung by forcible injection of gas or liquid into the pleural cavity 2 Those that perforate the visceral pleura They are divided into *a*, those that simply perforate the lung —pneumotomy, *b*, those that remove all or some portion of a lung—pneumectomy

What are the pathologic conditions, on the one hand, requiring collapse, on the other limiting the advisability of operative procedure to collapse? *a*, empyema *b*, tuberculosis that is moderately advanced—too far advanced for pneumectomy

In considering these subjects several questions arise

1 Is the lung, situated in its bone bound cavity, accessible to surgical manipulation? *a*, What are the difficulties and dangers encountered in entering this cavity? *b*, To what extent may this wall be removed and replaced and what manipulation is permissible within the chest?

2 What is the effect of opening the pleura—of pneumothorax? *a* Immediate—1 with adhesions, 2 without adhesions *b*, secondary How can its dangers be avoided or lessened?

3 Can the lung be incised? In pneumotomy what are the dangers and limitations? They are *a*, hemorrhage, *b*, pneumothorax—1, from opening in chest, 2 from opening the bronchi, *c*, inflammation—1, pleuritis (of same and opposite side), 2, pneumonia (traumatic), *d*, sepsis

4 What are the pathologic conditions of the lung requiring incision—pneumotomy? *a*, hernia, *b*, injuries (infected) *c*, abscesses, *d*, bronchiectasis, *e*, gangrene, *f*, foreign bodies *g*, tubercular cavities, *h* hydatids, *i*, actinomycosis

5 Can the lung be excised? In pneumectomy what are the dangers and limitations? They are Immediate—*a*, hemorrhage, *b*, pneumothorax, *c*, dyspnea (causes and relief) Secondary—*a*, shock, *b*, dyspnea, *c*, hemorrhage, *d*, sepsis, *e*, pleuritis and pneumonia on opposite side Best method of treating stump Extra-thoracic, intra thoracic, drainage or closure Pathologic histology of repair of stump Artery, vein, bronchus

6 How is the chest filled after excision? What are the pathologic conditions in which excision is desirable or required? 1, Neoplasms of chest wall involving lung, 2, circumscribed tuberculosis

7 Can the lung be defunctionalized? How may this be accomplished artificially and quiescence maintained? 1, By injections into the pleural cavity, 2, by resection of the ribs, which allows the chest wall to collapse, 3, thoracotomy, with separation of pleural adhesions and compression of lung What are the technical difficulties of intra pleural injections? *a*, Adhesions, *b*, consolidations What are its technical dangers? *a*, Air embolism, *b* sub pleural emphysema, *c*, pulmonary emphysema, *d*, dyspnea, *e*, sepsis—1, from without, 2, from within (1, tubercular foci, 2, septic foci) How can we determine that the injected material is passing into the pleural cavity and not into the lung tissue or bronchus? What is the most desirable material to use for injection? What are the effects of this pulmonary quiescence on the healthy lung—on diseased lung—particularly in tuberculosis? How long must a lung remain functionless that the process of repair in tuberculosis may be complete? Are pleuritic effusions beneficial or prejudicial to the repair of tuberculosis of the lung?

From the dawn of the history of medicine we find recorded cases of accidental penetrations of the chest by sharp or pointed bodies, as stakes, lances, sabres, bullets, forks, etc The results of these accidents were hemorrhage, pneumothorax and pulmonary hernia, etc An analysis shows that many of the cases recovered without surgical interference and that a smaller number did not even present symptoms of a grave character With these cases as guides and inducements for surgical exploration the surgeon was slow to act on the evidence which they presented Large portions of the chest wall have been torn away accidentally and removed for tumors of the breast without opening the pleural cavity, and no special danger was attributed to the procedures Incisions were made between the ribs for the relief of pathologic conditions from the time of Hippocrates, still it remained for Estlander, Schede and Delagéniere to popularize the free opening and removal of a considerable portion of the bony parietes They have shown that over one half of the costal framework of one side of the chest may be removed without any great danger But in their operations they had present a pathologic condition of the pleura, which formed practically a secondary inner chest wall for the respiratory apparatus As a corollary to their procedure we find recorded a number of cases of removal of the chest wall for neoplasm when there was no such secondary thoracic wall to protect the lung, the latter collapsed and the cavity filled with air The extent to which the chest wall has been removed in these procedures can be estimated from the operations of Kolaczek,[32] Liesrink[33] Sedillot, in the pre antiseptic period, resected the rib, pleura and part of an adherent lung successfully, since then Mass,[34] Kroenlein, Mil ler and many others have opened the pleura and removed lung tissue successfully in operations on the chest wall Cairo[35] collected twenty seven cases and found that five died immediately after the operation and three somewhat later He included cases in the pre antiseptic period In the later cases not a patient succumbed as an immediate result of the operation, so that the removal of the chest wall with opening of the pleural cavity is today a recognized surgical procedure Weinlechner's case is an exception to the above, he removed a large myxochondroma of the rib, resected three ribs and left an opening in the chest wall as large as the palm of the hand, he was unable to secure a flap sufficient to cover the opening, tampon of gauze, the patient died of a septic pleuritis in twenty-four hours Kroenlein[3]* in 1883 removed a large portion of the chest for sarcoma of the rib which involved the pleura, in 1887 he removed from the same patient a recurrent growth involving the chest wall, pleura and lung, the latter was separated and the cavity was drained The patient lived for seven years after the primary operation

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[32] Arch für Klin Chir b 24

[33] Ibid b 26

[34] Verhand. des Chir Cong 1885

What are the dangers of operation on the chest wall? They are Shock, hemorrhage, pneumothorax and sepsis

Shock—The shock from injuries and operations on the chest wall, without involvement of the internal viscera or the opening of the pleural cavity, is usually very slight, as may be estimated from the extensive thoracoplastic operations which are now in vogue, and will therefore receive no special consideration

Hemorrhage—Injuries during operation to the internal mammary artery are not likely to occur, as operations on the lung and pleural cavity do not usually extend so close to the sternum Accidents with fatal hemorrhage from this artery have not been frequent Situated as it is on the inner side of the chest wall (see Fig 9) hemorrhages from it, except when the opening is large, are mostly internal and not easy of recognition However, the regularity of its course in the upper part of the chest close to the sternum enables the surgeon to estimate with considerable exactness the probability of its involvement in a particular injury In eleven cases reported by Tourdes, six died, all five cases recorded in the history of the American war terminated fatally (Paget) The diagnosis should be based on the location and direction of the penetration, the general signs of hemorrhage, accumulating fluid in the pleural cavity with collapse of the lung and occasional external hemorrhage from the wound or hemoptysis Where internal mammary hemorrhage is seriously suspected the surgeon should have the courage of his convictions, enlarge the wound to the pleura and if necessary resect the cartilage, then the bleeding points may be recognized and ligated Another method suggested is the placing of a ligature upon the proximal side of the injury in the second intercostal space within a quarter of an inch of the sternum Ligation in loco is preferable, as hemorrhage from the vein, as well as the artery, is grave We should have no more hesitancy in opening the chest wall for hemorrhage from its arteries or from the lung than we should in opening the abdominal wall under the same conditions, as with a hemothorax already present the lung is collapsed and the effect of a pneumothorax is of little importance The question of hemorrhage from the intercostal arteries is of great importance to the surgeon Fatal hemorrhage from an intercostal artery has followed paracentesis and simple thoracotomy for the relief of a pleuritic effusion, and many fatalities are reported from injuries to these vessels Paget reports twenty-three cases, eighteen of which terminated in death, fourteen of these were operated, with eleven deaths, showing what a great mortality occurs from an injury to such a small artery It should be borne in mind that deaths did not follow extensive operations on the chest wall involving these arteries, as in the Estlander and Schede operation, as the hemorrhage in these was easily controlled, but that they followed small incised, punctured and penetrated wounds, the most dangerous condition is a splitting of an artery The hemorrhage presents the same symptoms which guide us in the recognition of hemorrhage from the internal mammary The indications for treatment are compression and ligation I mention compression first in order to emphasize that it should never be relied on, either as compression from within by a plug attached to a strong silk ligature or as pressure from without Ligature including the rib on either side of the wound is also to be deprecated The intercostal wound should be enlarged and the bleeding point detected by the hot, pulsating stream against the end of the finger, better still, a subperiosteal resection of the rib should be made, which insures an inspection of the field and accurate localization and ligature of the bleeding points It should be a surgical law and applicable here that when a surgeon is called to a primary or secondary hemorrhage his operation should be as radical as is necessary for the absolute control of the hemorrhage he must not temporize, as these patients give him only one opportunity, if this is not taken advantage of they are lost

Pneumothorax may be classed as traumatic, idiopathic (internal pathologic) and therapeutic The apprehension of this condition has been the greatest barrier to the surgery of the chest, and still it has been one of the most common sequences to traumatism of the chest wall, as pneumothorax with or without emphysema following fracture of the rib We ask, what are its dangers? Is the admission of air into the pleural cavity in itself a dangerous occurrence? If so, why? Is the danger due, 1, to the shock to the pleura from the admission of the air or to its absorption, 2, to compression of the lung and impairment of the respiratory exchange of gases, 3, to effect upon the pneumogastric filaments by the sudden contraction of the lung tissue, 4, to displacement of the mediastinal organs, constricting and affecting the cardiac outlets, 5, to displacement of the mediastinum, lessening the power of expansion of the other lung, 6, to increase of tension in the circulation by collapse and emptying of such a large quantity of blood from the lung into the general circulation Different observers attribute the unpleasant effects produced by pneumothorax to the above-mentioned causes That there is little shock or discomfort produced by the admission of air into the pleural cavity has been shown by numerous accidents to the chest, experiments and operations extending from the time of Hippocrates to the present day The infrequency of unpleasant symptoms from traumatic pneumothorax may be estimated from the reports in the surgical history of the American Civil War, in 11,540 chest wounds, unpleasant complications from this cause were recorded in less than half a dozen (Paget) In twenty years' experience in emergency surgery of the large hospitals I have observed traumatic pneumothorax as a cause of unpleasant symptoms in but two cases, in both of these the wounds were small and situated in large bronchi near the hilum of the lung In my recent compressions of the lung by injections with nitrogen gas, in my first case 120 cubic inches having been used, there was only a temporary dyspnea produced The patient was up from the table within five minutes and refused to go to bed In my second case I injected 200 cubic inches, it produced quickened respiration, a feeling of constriction in the chest, slight dyspnea and tickling in the throat In the normal conditions of the pulmonary organs with a perfectly developed mediastinal septum the opening of the chest for the admission of air is not a grave occurrence, although pneumothorax is a more serious condition than emphysema There are circumstances which make pneumothorax dangerous to life, as when the air is admitted into the pleural cavity through a valvular opening either from within or without, in which condition it may attain a considerable degree of pressure In perforating wounds of the chest, even when the external wall and a bronchus are opened, pneumothorax is not a necessary sequence, as the cohesion of the pleuræ (West, Brousse) as well as pathologic adhesions prevent its formation This cohesion must be stronger than the contractile power of the lung, which is equivalent to about 7 mm of mercury or 3½ inches of water In my experiments and in operations in which no pathologic adhesions have existed, I have not observed in a single instance that the lung remained in apposition with the chest wall when the upper air passages were free I am convinced from a careful observation and demonstration of this point in experiments that the pleuræ do not remain in contact when air is admitted into the pleural cavity, even through pin-hole openings With each inspiratory act the lung recedes from the chest in proportion to the freedom of the admission of air In expiration, with the contraction of the chest, the lung appears to come closer to the opening in the chest wall, while it really contracts closer to the hilum With large free openings sufficient to admit the hand, the lung in two or three expirations collapses to its hilum and remains there stationary without the slightest effort at expansion if the balance of pressure within the pleural cavity and trachea is equal or when the greater resistance is offered in the upper air passages An erroneous conclusion has been drawn by some experimenters, and the expression given in Paget's admirable work, "One may see the lung moving freely in respiration in an animal from which a great part of the wall of the chest has been removed I have often made on dogs penetrating wounds on both sides of the chest larger than the opening of the glottis, and I know that an animal under these conditions lives a long time and dies only of a sort of gradual asphyxia " From this it would be inferred that the lung had an expansive power of itself, but this is not the case, the dog under such conditions lives for a time because in each rapid, jerky inspiration there is a vacuum or diminution of atmospheric pressure in the pleural cavity and a moderate filling of both lungs but make these openings large and free and there will be an immediate collapse of the lungs in the respiratory act With one pleural cavity open, divide the mediastinal septum so that the air passes freely into both cavities and there is an immediate and permanent collapse of both lungs without the slightest effort at re-expansion, either in inspiration or expiration If one pleura remains intact and the other has free access of air the lung in the open pleura collapses on inspiration but expands on expiration, particularly when resistance is offered to egress of air in the upper air passages, by this method the air in the lung on the uninjured side in expiration is forced into the collapsed lung in the open side I have shown by complete occlusion of the trachea with one pleura open and the other closed that an alternate expansion and contraction could be produced by the exchange of air from one lung to the other, the collapsed lung expanding in expiration and contracting in inspiration, the other lung performing the reverse of this action

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[35] Deutsch Med Woch 1898, Bd III

[3] Berl klin Woch. 1884 b xxi site v

The first opportunity to observe this action of the lung in the human subject was afforded me in the case of a policeman injured by the explosion of a bomb in the Haymarket riot May 4, 1886 A considerable portion of the lower part of the right chest was carried away, the opening was so large that the hand could be inserted into the pleural cavity The lung could be observed contracting slightly in every inspiration, with the mouth open and the upper air passages free it expanded but very little in expiration, if, however, the upper air passages were closed when the patient expired the lung filled the entire chest cavity, and when an effort at coughing was made a hernia of the lung resulted The patient succumbed in thirty-eight hours from the effect of continued hemorrhage from extensive laceration of the liver

A second case, a bullet wound in the seventh intercostal space on the left side in the post-axillary line The man stated that his antagonist shot from the left and behind The question arose, was the diaphragm penetrated, and if so, was the stomach injured? The house surgeon, under my direction, enlarged the opening, resected the ribs to examine the diaphragm and stomach through the chest, which was the easiest route It was found when the chest was opened that the bullet had penetrated the diaphragm about two inches from the chest wall, this opening in the diaphragm was enlarged and the finger inserted into the peritoneal cavity, the stomach was found uninjured and the opening in the diaphragm was closed The wound in the lung could be readily examined, when coughing was produced the lung protruded from the chest wall, when he inspired it again contracted, it could be easily retained in the wound The admission of air to the pleura produced no unpleasant symptoms, it only increased the frequency of respiration

A third case, Miss M , admitted to Mercy Hospital June 11, 1896, for the drainage of a small cavity situated in the upper portion of the lower lobe of the right lung, under the fifth rib and between the scapula and spine In resecting and elevating the rib the pleura was torn, the lung immediately collapsed and could be seen expanding on expiration and contracting on inspiration The pleura in the neighborhood of the opening was irritated and the flap replaced, the intention was to perform a second operation after adhesion of the lung had taken place The anesthetic was suspended when the chest was opened there was no marked dyspnea and the respiration was only slightly increased after the patient was returned to bed She felt no inconvenience nor discomfort from the resulting pneumothorax The quantity of expectoration rapidly diminished and when she left the hospital it was only about one third of what it had been previously Two months later it was still more reduced and she refused to return to the hospital for the completion of the operation May 20, 1898, I succeeded in locating this patient and made an examination I found the cavity had increased in size and the quantity of expectoration was about double what it had been when she was first admitted to the hospital She still refused operation

It is not believed that the absorption of the air by the pleura produces any deleterious effects, as a rule it takes place slowly, cases have been reported in which the air disappeared from the chest very rapidly Fowler and Godlee state that a quantity of air sufficient to give a tympanitic note all over one-half of the chest completely disappeared in three days If the air remains long in the chest the oxygen is absorbed and the carbon dioxid and nitrogen remain In my experiments, injecting the chest with nitrogen, it was found by means of the radiograph that at the end of five weeks there was scarcely an appreciable diminution of the quantity of gas in the pleural cavity This demonstrates that pure nitrogen gas is very slowly absorbed The length of time required for the absorption of a given quantity of sterilized air by the pleura can be easily determined by repeated X ray exposures The above mentioned experiments as well as the clinical effusions into the pleural cavity demonstrate that the dyspnea and other unpleasant symptoms of pneumothorax are not due to the diminished respiratory exchange from compression, nor due to the effect on the pneumogastric by the contraction of the lung

There are no definite data to show that the sudden contraction of the lung upon the terminal filaments of the pneumogastric has any effect in producing the unpleasant symptoms that occasionally occur in pneumothorax I do not see any good grounds for believing that the displacement of the mediastinal organs produces a kinking of the large arterial or venous trunks at the diaphragm and in that way hampers the heart's action We have the same degree of displacement of the mediastinum with effusion and hemorrhage without these unpleasant effects We can allow, experimentally, the mediastinal contents in dogs to pass far to the left, and if they are immobilized there the dog's respirations are but little interfered with This condition would apparently place the vessels at their greatest disadvantage as far as the outlets in the diaphragm are concerned, still produce no marked effect It has been suggested that the increased blood pressure by the large quantity of blood forced into the general circulation by the contraction of the lung produces the unpleasant symptoms of pneumothorax This theory is very far-fetched and I recall no analogous train of symptoms produced from increase in blood pressure by its being forced into the general circulation from other parts of the body The most pronounced and dangerous manifestation observed in my experiments was when a medium sized opening, two inches in length, was made in an intercostal space and the air allowed to pass in and out with *some* opposition The lung on the open side gradually contracted to the hilum, the mediastinal septum and contents flapped to and fro in respiration like a sail during a lull, when the dog inhaled, the mediastinal septum concaved greatly to the uninjured side, when he exhaled, it convexed to the opposite side The chest ceased to be a cylinder for the piston, the diaphragm, in the respiratory act The mediastinal septum became a second diaphragm which contracted and destroyed the aspirating or piston power of the true diaphragm With this motion of the septum there was comparatively no exchange of air in the lung, there was merely a variation in the shape of the lung, the septum soon became emphysematous and ruptured The dogs in this experiment had rapid, panting respiration, which shortly ceased The respiration could be easily restored by placing the hand over the opening in the chest wall with the diaphragm either concave or convex, by keeping the hand in position for a few minutes, the cyanosis would disappear and the animal reacted to his normal condition, proving that it was not the displacement of the mediastinal organs to right or left, not the diminution in the respiratory area, but the absence of secure pressure which forced the air out of the lung on the healthy side in expiration and aspirated it in inspiration The mechanism of this action can be readily demonstrated on a half-filled rubber bag I am convinced that the dyspnea following opening of the pleural cavity is due to the vibration of the mediastinal septum and contents destroying the piston action of the diaphragm

In support of this theory I wish to call attention to the methods of relief reported by different operators in cases of dyspnea following opening of the pleura in surgical operations on the lung or pleura The operators closed the opening regardless of the condition of the lung, as far as contraction and expansion were concerned, still the patients were relieved Delagéniere filled a pleural cavity with water to prevent dyspnea after he had resected the rib and removed a very large quantity of pus from the cavity It can be seen from this case that the respiratory area was not increased, the quantity of blood in or out of the lung was not changed, and the pneumogastric filaments were not interfered with, but the chest cylinder was rendered complete by the immobilization of the mediastinal septum Covering the opening in the chest with gutta percha to prevent the intake and egress of air would have accomplished the same result When a drainage tube has been inserted into the pleura and dyspnea occurs the occlusion of the tube relieves it

I found that by placing a forceps on the collapsed lung and drawing it into the opening the dyspnea was immediately relieved and respiratory movements were at once resumed, a forceps placed on the hilum of the lung immobilizing the septum had the same effect I also noted that if the lobe were secured in the aperture and only partially filled it, it did not take part in the respiration, but the dog was relieved, due I believe to the steadying of the mediastinal septum The plugging of the trap door orifice with the lobe or suturing it to the margin was the best method for relief of the dyspnea Carl Bayer (*Prag Cent fur Chirur*, Leipsig, 1897, s 37), when operating in a case drew up the collapsed lung and sutured it to the margin of the wound The symptoms of dyspnea and collapse disappeared and this portion of the lung filled and emptied in respiration

Infection of pleura — There is great danger of infection when the pleural cavity is opened, this is particularly true in experimental [illegible] k T greatest fatality in operations on the l [illegible] monkeys has been from a suppurat [illegible] on the side which was operat [illegible] e, this was emphasized in [illegible] experimenters, Gluch, Bloch, Schmid and Biondi Just why a pleurisy should so frequently occur on the opposite side is not known, unless that in the dog the infection is transmitted through the thin mediastinal septum The same pathologic condition has been noted by surgeons in the removal of tumors of the chest wall in which the lung was involved The pleura of the dog is much more susceptible to infection than the peritoneum, or better, it has less power to resist infection than the peritoneum The pleuritis may be of the dry fibrinous variety, or it may be associated with a large serous effusion (Note experiment on April 24, in which the effusion was so great as to fill the pleural cavity on the side operated and to compress the lung on the opposite side)

Septic pleurisy of a virulent and fatal character takes place with pneumothorax when there is a rupture into the pleura of a septic accumulation which previously communicated with the external air, as a bronchiectatic cavity, gangrene, suppurating or tubercular foci, subphrenic abscess, etc West, Walsh and Fraentzel claim that 90 per cent of all cases of idiopathic pneumothorax are due to tubercular phthisis Havershon, in 1357 postmortem examinations of phthisical subjects at the Brompton Hospital, from 1885 to 1896 found that septic pneumothorax had occurred in 87 Paget reports a case of septic embolus of the lung and pneumothorax occurring in typhoid fever Rupture of the lung has taken place through the alveoli without any recognized pathologic condition T E Adams[36] reports a case of pneumothorax with rupture of lung from an occlusion of the glottis The dyspnea was sudden in making its appearance, there were marked physical signs of pneumothorax, its disappearance was rapid, the air was entirely removed in three weeks, there were no symptoms of inflammatory trouble in the lung, the author attributes this fact to the arterial and venous ischemia induced by compression J Ashhurst, Jr, reports a similar case following contusion of the chest with glottis closed, no fracture of ribs, it was followed by emphysema and hydrothorax, patient recovered without operation Pneumothorax has been present in numerous cases of subphrenic abscess rupturing into the pleural cavity[37] Pneumothorax associated with these infective processes has a great mortality, few, however, of the cases die immediately, most of them succumb to the secondary effects of the pleuritic infection

Diagnosis of pneumothorax—The diagnosis of pneumothorax, either traumatic or idiopathic, is not difficult The latter (idiopathic pneumothorax) is due principally to tuberculosis, 3 to 8 per cent of tubercular cases have pneumothorax (Eichorst, Guttmann, His) The absence of respiratory sounds, the distant bronchial breathing, the tympanitic percussion note, the displacement of the mediastinal contents and diaphragm, the bulging of the intercostal spaces and, if needed, the more positive evidence of the radiograph, confirm the diagnosis

Treatment —The treatment of pneumothorax depends upon the indications in the individual case The traumatic cases rarely require surgical interference Where, however, the displacement of the mediastinal organs is great and the dyspnea is distressing, it is an indication that there is a valvular opening which, with the jerky inspirations and frequent coughing, has produced a plus pressure in the pleural cavity on the injured side This is often associated with an accumulation of blood and serum and may readily be relieved by a paracentesis or by the introduction of a small trocar protected with cotton after the manner of a culture tube protection. The question would naturally arise, should paracentesis be performed in every case? It should if the relief of the air and fluid in the cavity were the only considerations, but as there is a laceration of the lung which must be closed, that organ is held compressed and immobilized by the air while repair of the lesion takes place If the lung were allowed free expansion it would require a much longer time to heal the laceration and if the air were aspirated from the chest it would refill through the original rupture If the trocar is not convenient and the symptoms are alarming, the scalpel may be used to make an opening close to the upper margin of the ninth rib directly below the angle of the scapula, Fraentzel and Senator favor this incision Netter has shown that tubercular bacilli are always present when the pneumothorax is due to the rupture of tubercular foci in the lung, and that pyogenic and saprogenic germs are frequently found The majority of cases of penetrating wounds of the chest pass through an aseptic course to recovery When, however, the symptoms of septic pneumothorax with effusion are present, there is positive indication for immediate and free incision The scalpel of the surgeon is too often withheld in this class of cases until the patients have passed beyond the possibility of recovery with its aid An incision here can do no harm, can be performed with a local anesthetic and will save many lives if resorted to early This rule with additional emphasis should govern the treatment of idiopathic pneumothorax, as it is practically always associated with septic pleuritis of a virulent type, if curable at all it is by early drainage, in occasional cases, in the early stage, irrigation with physiologic salt solution, later, possibly with a slight stimulating antiseptic I believe irrigation of pleural cavities greatly overdone, the same may be said of irrigation of wounds in general Free drainage is all that is necessary after the surface is once granulating, which practically protects it from infection and absorption by the exosmosis of the fluids Perforations of the lung close rapidly, therefore the drain should be removed as early as possible The treatment of pneumothorax resulting from operations on the chest wall will be considered under pneumotomy and pneumectomy

Hernia of the lung is a very rare occurrence, there are occasional cases mentioned through the literature, the histories of which are very interesting Herniæ may be divided into two classes, simple and compound The former, simple, includes those with internal laceration of the chest wall without an opening through the skin, and are produced by blunt objects which fracture the ribs or perforate the internal thoracic wall in the intercostal spaces The compound are those associated with penetrating wounds of the thorax, here the lung is exposed in the wound or protrudes through the chest wall The mechanism which produces the protrusion may be readily understood The contractions of the chest wall on the same and opposite sides compress the air in the lungs, the opposition afforded the egress of air in the upper air passages produces intra-pulmonary tension which is relieved by the escape of the lung through the fissure It is surprising what little pressure placed on a rubber tube inserted in the trachea is necessary to cause the lung to protrude many inches through an opening in the chest wall A pressure equal to four inches of water suffices A hernia may or may not have a true hernial sac of pleura, depending upon its etiology and the rapidity of its formation In hernia of the lung we do not include the protrusions of the lung above the first rib into the triangular spaces of the neck when they are not associated with injury, nor that produced at this point by artificial respiration, as the case of Chosu of Brussels The symptoms and the physical signs with the location of the protrusion are so characteristic that they can scarcely admit of error in diagnosis An exception to this is when a hernia is associated with emphysema

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[36] London Lancet 1887 Vol I p 709

[37] Inter Clin., Philadelphia, 1894 Vol III, pp 159-161

Treatment—The question of treatment of the first class of cases, simple hernia, can be disposed of by fulfilling the indications of reduction and retention The latter may be accomplished by a compress, which should be inelastic and fit the opening snugly If the case has become chronic, operative treatment for closure of the opening in the chest wall may be instituted (Tuffier's and Reclus' cases) Compound hernia of the lung forms one of its most interesting though not practical pathologic conditions, as the accident is so extremely rare I consider the cases reported of great value as an index of the extent to which the lung may be interfered with in a surgical way I take the privilege of quoting verbatim from Paget the case of Rolandus, published in the year 1499 "Called to a citizen of Bologna on the sixth day after his wound, I found a portion of his lung issued between two ribs, the afflux of spirits and humors had determined such a swelling to the part that it was not possible to reduce it The compression exercised by the ribs retained its nutriment from it and it was so mortified that worms had been developed in it They had brought together the most skilful chirurgeons of Bologna who, judging the death of the patient to be inevitable, had abandoned him But I, yielding to his prayers and to those of his parents and friends, and having obtained the leave of the Bishop, the master and the man himself, I yielded to the solicitations of about thirty of my pupils, and made an incision through the skin, the breadth of my little finger-nail away from the wound, all round it Then, with a cutting instrument, I removed all the portion of the lung level with my incision The wound resulting from this resection was closed by the blood issuing from my incision, and was dressed frequently with the red powder and other adjuvants By the grace of God it cicatrized and recovery took place It is true that one had to wait long for it The patient, with his master, Rolandini, has since then made the voyage to Jerusalem, and has returned in good health If you ask me what I should have done in this case if I had been called to it at once, I answer that I should have dilated the wound with a small piece of wood, keeping the lung warm with a cock or a fowl split down the back, and should then have reduced it, and kept the wound open till the portion of the lung was wholly mortified If you still question me, to know how this man can live without his lung, I answer that the part remaining within the chest profits by the nutriment destined for the whole of the lung, and so is developed, and that nature has been able to create supplementary parts in it, which is an easy thing in an organ which is soft and near the warmth of the heart"

A similar case was reported by Tulpins in 1674, in which the protruding portion was ligated and cut off with the scissors Couvey collected fourteen cases treated by removal of the protruding lung, with twelve recoveries A Demons reports a successful case The method of treating the stump in these cases consisted of ligation, with retention of stump in the wound, amputation with the cautery, or dressing with antiseptics and allowing the lung to slough or dessicate, as the tendency might be in the individual case, depending upon the circulation[38] The fact that this class of cases recovered, after pneumectomy with the retention of the stump in the wound, led me to the experiment of amputation of the lung with extrapleural treatment of the pedicle and the production of primary hernia of the lobe, to be removed with secondary amputation In compound hernia it is not necessary that the protruded portion should be amputated, if seen early it is better to cleanse and return the lung and resort to drainage of the most dependent portion of the cavity, close the opening in the chest by suture of the separate layers, and if necessary by a catgut suture of the fractured ribs[39]

Wounds of the lung—This subject is so extensive, and the cases are so common, that a volume might be devoted to their enumeration and analysis, still, they may be so grouped into classes for their general consideration that it will only be necessary to cite cases typic of each class We will include here the cases of secondary infections following fracture of the ribs, stab, bullet and pointed object penetrations Infections following simple fractures of the ribs are very rare, considering the frequency of this injury They are readily diagnosed and the treatment should be the same as that for compound infected injuries, considered later A case illustrating the secondary infection following fracture of the ribs is reported by Maydl,[40] in which a large quantity of the purulent fluid was removed from the lung three weeks after the accident, the pleura having been drained of blood and serum immediately after the injury, case recovered

Stab wounds of the chest are common, but are rarely associated with serious symptoms I recall a case which occurred in the Cook County Hospital, a patient received fourteen stab wounds in the posterior wall of the chest with a knife blade 2½ inches in length, many of these perforated the chest wall, still the patient suffered no serious inconvenience, there was a slight pneumothorax and hemoptysis for the first two days, the temperature did not exceed 100 degrees at any time and he made an uneventful recovery This is illustrative of the ordinary course of stab wounds of chest with pocket knives The lung, like the intestine, is not injured by a stab wound unless it be adherent or the penetration takes place at its hilum or mesentery Hemorrhage, pneumothorax and hemoptysis are not common after stab wounds The indications in these cases are to clean and seal the external wounds administer the necessary medicines to prevent coughing, never probe or explore, refrain from protracted examinations, and allow the patients to remain in the recumbent position If infection follows they should be treated the same as infected bullet or other penetrating wounds

Bullet wounds of the chest produce a great variety of pathologic conditions, and still a very large percentage of the cases pass through an uncomplicated course to recovery. This great difference in the course and results of cases is due to the portion of the lung penetrated, the size and character of the missile, the involvement of the large vessels and bronchi, the presence or absence of infective material and the sequence of infection. Penetrations of the periphery of the lung by bullets, as a rule, do not produce serious symptoms, there is but slight hemoptysis, this is estimated to be present in less than 20 per cent. of the cases of bullet perforations of the lung, its presence does not positively indicate perforation, though practically it has that significance, there is no appreciable hematothorax, shock, pallor, feeble pulse, apparent anemia in bullet wounds of the lung do not necessarily mean hemorrhage, as they are often pronounced when there is no appreciable quantity of blood in the pleural cavity. This fact must never be lost sight of when thoracotomy is contemplated for the relief of hemorrhage. There is usually diminution of the respiratory action on the injured side and occasionally a limited pneumothorax, on the third or fourth day after the injury there may be evidence of a circumscribed traumatic pneumonia which rapidly subsides and then the patient is convalescent. Contrast this with the course of a case in which the bullet penetrates the hilum and is associated with severe intra-thoracic hemorrhage. The patient, after the injury, is collapsed, becomes pulseless, his respirations are increased in frequency and are of a sighing character, the lung on the injured side has collapsed and within a short time the patient succumbs. This is the class of cases in which surgical interference can not be considered for the relief of hemorrhage, as they terminate fatally before surgical interference is possible. It is in cases of hematothorax where the escape of blood is slow or secondary that thoracotomy with ligation, compression or cauterization of the bleeding point comes into consideration. It has been suggested that allowing the lung to collapse would produce hemostasis. Clinical experience and experiments have demonstrated that it has no such effect, that induced pneumothorax does not act as a hemostatic and therefore should not be resorted to. In reviewing the cases of hematothorax that have been treated by open incision and ligation I have been impressed by the almost unanimous failure of mention of unpleasant symptoms from the pneumothorax produced by the operation. Whether the absence of symptoms was due to the fact that the lung was collapsed before the operation by the accumulated air or blood I do not know, but the practical fact is the same, and its clinical significance is that under these conditions the chest may be opened with little apprehension as to the pneumothorax producing unpleasant symptoms. This observation might indicate the filling of the chest with fluid or air before performing pneumotomy or pneumectomy. Of 98 cases of fatal gunshot wounds of the chest occurring at the siege of Strassburg 24 were due to hemorrhage into the pleural cavity alone (Beck.) Of 65 penetrating wounds of the chest in military practice by Sir Wm. McCormack and Fisher 36 terminated fatally, which is a very much greater percentage than appears in civil practice. External hemorrhage is not common with gunshot wounds of the chest, occasionally there may be some bleeding from vessels situated in the outer portion of the thoracic wall. It must not be forgotten however, that in wounds of the intercostal and mammary arteries the hemorrhage is more likely to be internal than external and these small vessels should be examined first in all operative procedures. We have no means of determining without exploration whether the hemorrhage is from the chest wall or the lung itself. Quenu, Michaux, Berger, Delorme and Reclus warmly advocate surgical interference when the evidence of hemorrhage is unmistakable. Omboni[41] excised two different portions of the same lung for a bullet wound, the anterior margin of the upper lobe had a V-shaped piece removed, followed by accurate catgut suture, through the same opening of the chest a portion of the lower lobe was drawn forward, ligated *en masse* and excised, drain inserted. Patient died on sixth day. Postmortem: Fatal pyemia from sub-serratus magnus infection, stump in good condition and healing, cause of death, defective drainage of external portion of wound. V. Richards[42] successfully excised pneumocele following penetrating wound of the thorax. Delorme and Robert operated, but patients were in such bad condition that they died within fifteen minutes after operation.

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[38] Bull et mém Soc de Chir de Paris 1886 N S 12, p 450

[39] H Hayberter 1890, Lancet, 1893

[40] Wien Klin Runds., June 23 1895

From careful examination on the cadaver and from my experiments on the dog, I am convinced that many lives can be saved by early intervention in cases of intrathoracic hemorrhage either by ligature with or without amputation, suture with catgut or cauterization with the Paquélin. I have little confidence in our ability to produce hemostasis by packing such an elastic and easily infiltrated tissue as the lung, the suture is preferable and should be performed with a round needle and absorbable material, the greatest antiseptic precaution should be exercised.

The secondary changes which occur after bullet wounds, as pneumonia, abscess, gangrene, pyo hematothorax, empyema, septicemia (sapremia) and pyemia are of much greater importance and deserve more attention than is usually given them either in the text-books or in recent monographs on this subject. The pneumonia in many cases is limited, in others it may involve a lobe or an entire lung, it often has marked evidences of acute pyogenic infection extending even to gangrene of the infected portion. Pyo-hematothorax and empyema may occur shortly after a bullet wound of the chest. The patient shows, in addition to the symptoms of depression and shock from the hemorrhage, manifestations of infection, not necessarily a great elevation of temperature but other marked evidences of septic intoxication, as dry, coated tongue, delirium, thirst, rapid respiration, etc. These symptoms usually present themselves on the third or fourth day after the injury and rapidly increase in severity until the patient succumbs from the sapremia on the seventh or eighth day unless rescued by surgical interference. The dictum of non-interference in gunshot wounds of the chest has taken such root in the profession that even unquestionable evidence of putrefaction and suppuration within the chest does not call forth active response on the part of the surgeon to afford relief. A patient with the same evidence of sapremia or septicemia in other parts of the body is immediately assisted by the surgeon, while in bullet wounds of the chest procrastination is the practice. I wish to emphasize that whenever there is evidence of putrefaction or suppuration the chest should be immediately opened and drained the same as the

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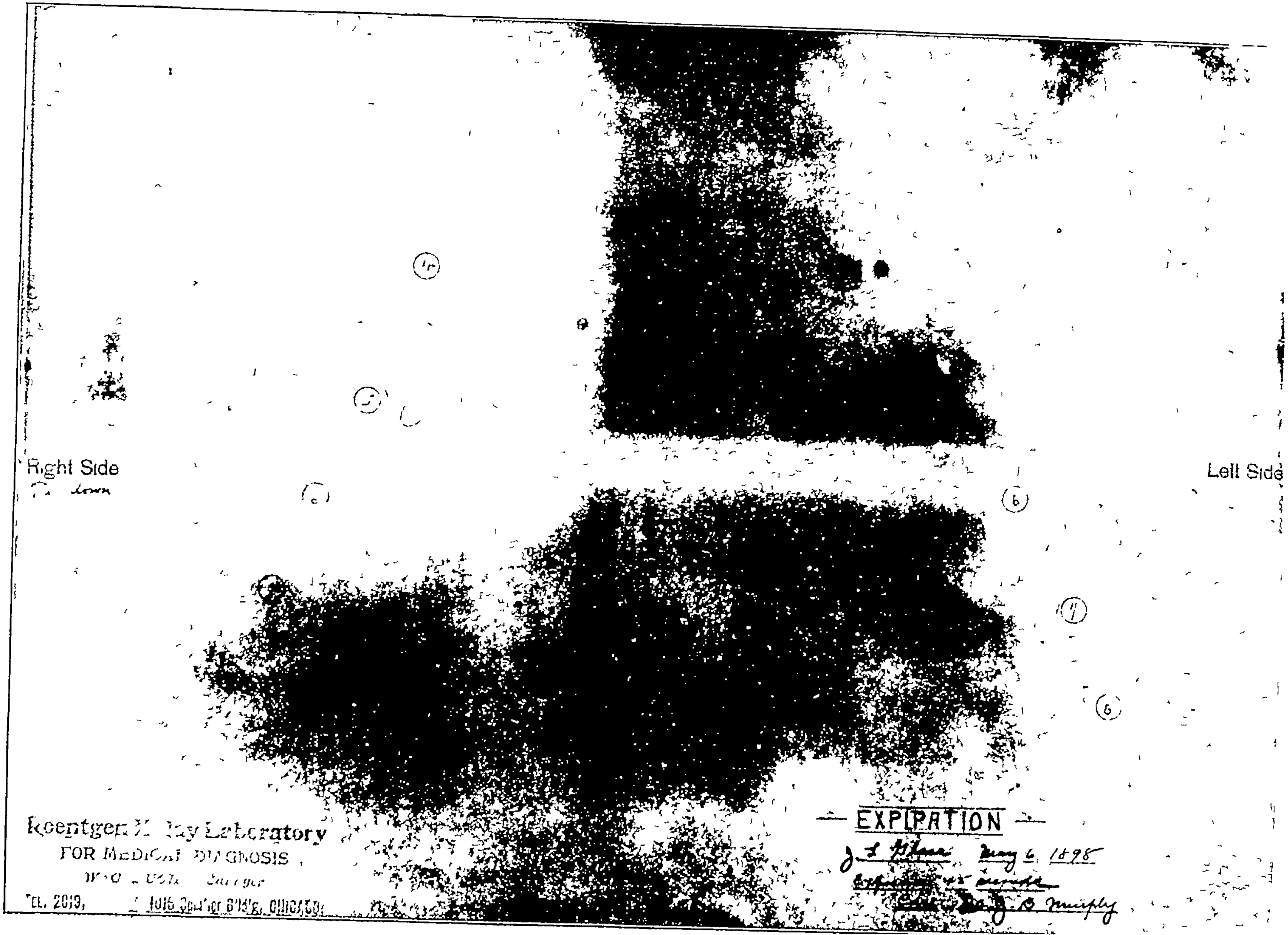
[41] Bull de Comit Med Cremonese Cremona 1884 iv p 228

[42] Indian Med Gaz. Calcutta 1880 xv p 213

RADIOGRAPH No 4


Right Side
Left Side
— EXPIRATION —
J. L. [illegible] May 6, 1898
J. B. Murphy
Roentgen X Ray Laboratory
FOR MEDICAL DIAGNOSIS
Tel. 2019,
1016 [illegible] Bldg, Chicago
6
7
6

peritoneum or cellular tissue would be under the same conditions I cite here a case of this class

J C, male, aged 27, admitted to Alexian Brothers' Hospital June, 1895, three hours previously was shot from in front with a 44 caliber bullet which passed into the chest and fractured the fifth rib, it lodged under the skin behind near the angle of the eighth rib, which was fractured The first day he was suffering from slight dyspnea, some pain on the right side, had expectorated a small quantity of blood and had pneumothorax The following day his temperature was 100 degrees, pulse 94, respiration 32, tongue slightly coated At noon of the third day his temperature was 103 degrees, dulness extended up to the axillary line in the recumbent position, tongue slightly coated, and he was mildly delirious, bronchial breathing could be heard over the upper portion of the chest behind, this was probably transmitted Fourth day—When I arrived at the hospital at 12 o'clock temperature was 105 degrees (rectal) pulse 160, respiration 42, he was cyanotic, unconscious and in a low, muttering delirium He was placed on the table and without anesthetic a resection of the eighth rib was made at the line of fracture The bullet and fragment of cloth were removed from the muscle wall, also a large quantity of offensive bloody debris and fluid from the pleural cavity The opening at the point of entrance of the bullet was enlarged and an irrigation of the cavity with sterile water was made The day following his pulse was 132, temperature 102 degrees, respiration 36, his delirium had almost subsided and his general appearance was improved In another twenty four hours his temperature had dropped to 100 2 degrees, his respiration 28 and pulse 124, and his general condition was still better From this time on his improvement was rapid The drainage tube was removed on the sixteenth day and in three weeks he left the hospital

This case is typical of its class, and similar cases may be observed almost any time in the hospitals of large cities The rule is, however, that they are allowed to go on to death without surgical interference, as the following case illustrates

M C, age 19, admitted to Alexian Brothers' Hospital May 16, 1893 A 44 caliber bullet penetrated the anterior wall of the right half of the chest fracturing the third rib The patient was very much shocked from the injury, pulse was 130, skin cold and clammy and countenance blanched, anxious expression, there was a marked area of dulness over the lower half of the right chest, pneumothorax of the upper half, hemoptysis was continuous but not severe The following day the patient's temperature was 101 degrees, pulse 118, respirations 54. He requested to be discharged from the hospital and under strong pressure was persuaded to remain another day The third day his respirations were 40, pulse 150, temperature 103 degrees He was delirious Operation was advised but the parents would not consent He was taken to his home, where after surgical consultation it was decided that he could live but a few hours and that interference would be futile The death took place five days after removal from the hospital The attending doctor told me that his condition remained about the same until the end The postmortem revealed a penetration of the middle lobe of the right lung and the upper portion of the lower lobe There was a fracture of the seventh rib at its angle, the bullet had dropped back into the pleural cavity The chest was full of an offensive sanguino purulent fluid, there was a cloudy swelling of all the tissues, no metastatic abscesses The cause of death was acute septicemia

This case shows how long a patient, with this variety of infection, may live after his condition seems hopeless I might cite many similar cases from the emergency wards of the county hospital We hope the surgery of the future will lend a helping hand to stay the mortality from secondary infection in gunshot wounds of the chest Simple incision and drainage may be all that will be necessary, but there should not be the slightest hesitancy in resecting one or more ribs and making a free incision in the pleural cavity in its most dependent portion regardless of the point of entrance or exit of the bullet The clinical course and treatment of penetrations with other sharp-pointed instruments is based on the same pathologic and therapeutic principles as stab and bullet wounds, the lung is rarely injured with these instruments and primary drainage is more frequently indicated

(To be continued)

REST—A NEGLECTED FACTOR IN THE TREATMENT OF GASTRO-INTESTINAL DISORDER

Presented to the Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association held at Denver, Colo June 7-10 1898

BY C D SPIVAK, M D

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It is not within the province of my paper to enter into the discussion of the subject of rest from a physiologic standpoint The question of rest is only being at present approached by the physiologists of the day through the study of muscle and nerve irritability, waste and repair, sleep and the still less explored domain of "fatigue" Not until sufficient experimental data will have been accumulated will we be in a position to form a rational physiologic theory of rest I will use the word "rest" in its most comprehensive sense—the antithesis of action Life is action, but action is made possible by the period of rest during which the spent energies are renovated All our organs manifest periods of action and repose alternately, some are absolutely rhythmic, as the circulation of blood, others are only intermittent, as the secretions and excretions The organs of vegetative life are so wonderfully arranged that they take their rest without asking our permission for it Nobody can bid the heart beat 120 times a minute, neither is one able to retain his urine at will for one week It is different with the organs of animal life Here automatism ceases If he will he thinks, if he will he exercises his muscles He knows no limit except the point of fatigue, which is the threshold of the pathologic There is another difference between the organs of animal and vegetative life After a continuous use of any one of the organs of animal life, be it thought, sensation or contractility of muscles, there comes a period of repose during which the organs of vegetative life go on performing their functions undisturbed On the contrary, when the organs of vegetative life have overstepped the point of fatigue, the organs of animal life invariably suffer in consequence more or less It is well known how digestive, circulatory and urinary troubles influence the motor, sensory and intellectual functions Rest, therefore, can be defined as nature's *prophylactic* It not only prevents the further breaking down of tissues, but it affords the chance for the tissues to store up new energy In the ordinary life of a healthy individual the period of activity and prophylactic rest are balanced unnoticed and unobserved We are unable to measure the time of activity and rest But as soon as man deviates from the normal it then becomes evident that the two must remain in a direct ratio in order to establish the equilibrium The greater the activity that produced certain abnormal phenomena the longer must be the rest The length of time which is required by nature for the repair of an injury must be in proportion to the severity of the injury, and the more severe the injury the longer time is required for the perfect recovery of the disturbed functions Rest in such cases becomes a *therapeutic* agent

Prehistoric man, I am sure, did not know of the terms prophylaxis, metabolism, katabolism, energy, etc , and yet rest has probably been his chief, and for a long time his only, remedy Nature has insisted upon it, "even to the extent of inflicting a twinge of pain on such as disobeyed her precepts " And notwithstanding the fact that the beneficent action of rest is so obvious, and may be said to be inherent and instinctive, so much so that even animals employ it as a therapeutic agent in surgical as well as medical cases, yet it was only in the seventies of this century that the first word was spoken in the elucidation of the question of rest I refer to the classic lectures of John Hilton on "Rest and Pain " The surgeon was the first to recognize the value of rest In 1878 the neurologist followed and sang the praises of nature's greatest *Materia Medica* It was our own Weir Mitchell who elaborated in his work, "Rest in the Treatment of Nerve Disorders," a cure that bears his name, the brilliant results of which made its author known wherever medicine is practiced Since that time it seems as if the surgeon and neurologist have monopolized "rest " It is indeed a happy coincidence that those who suffer from pneumonia and typhoid fever are unable to walk, otherwise the physician would never think of ordering them to go to bed In our day of multiplicity of drugs, patent and proprietary, legitimate and illegitimate, nostrum and specific, when a patient presents himself, and the diagnosis is once made, the first question is "Which of the thousand and one drugs shall I prescribe?" Surely there ought to be one which will hit the right point The surgeon thinks first of all of rest The neurologist tries to secure rest The physician alone uses the pharmacopeia first, last and all the time

True, in looking over the scanty literature on the subject of rest one finds here and there a timid voice raised apologetically for the use of rest in cardiac, pulmonary and renal troubles But the fear of being branded a crank makes them speak in tones not louder than a whisper, and their effort is lost in the pandemonium of the "new" and "newer remedies" craze

I wish to raise my voice many octaves above a whisper and proclaim loudly and boldly that I employ rest, nature's greatest panacea, as my first and best weapon against the greatest foe of mankind—diseases of the gastro intestinal tract I know that the tendency of our time is to treat diseases of the stomach by washing, scouring, scratching, punching and electrifying the stomach The gastro enterologists of the country have at the present time visions bright of the oncoming time when the same *modus operandi* will be applied to that poor piece of gut which measures only twelve fingers in length—when we will be able to wash, scour, scratch, punch and electrify the duodenum Far be it from me to scorn the work of an Einhorn, Hemmeter, Stewart or Turck There is none who appreciates more highly the services they have rendered to gastrology than I do I can assure you that before my stomach will perform the last functions of autodigestion I will yet wash, scour, scratch, punch and electrify a good many stomachs But I refer more to the tendency of the time, which makes everyone who reads a book on diseases of the stomach arrive at the only conclusion that lavage is the only salvation of the stomach, and that the stomach tube will "do it all "

I take the stomach and intestine to be in no way different from any other organ in our bodies, they are made up of the same tissues, are subject to the same insults, and their mode of repair is identical with that in any other part of the body I do not see the difference between the symptom-complex called neurasthenia and that symptom-complex called nervous dyspepsia Why apply the Weir-Mitchell treatment in the one and not in the other? I do not understand by what manner of reasoning one arrives at the conclusion that in the treatment of a painful limb, according to the maxim of Hilton, "the maximum of result is co equal with minimum of disturbances," and that a painful stomach or painful intestine should not be accorded the same privileges And lastly, it is incomprehensible to fathom the wisdom of prescribing rest for the weary limb, an exhausted organ, anywhere in the body except in the stomach The only redeeming instance in the whole array of diseases to which the stomach is heir, and in which the rest cure is recognized as the remedy *par excellence* is ulcer of the stomach The principle of the cure was laid down by Niemeyer, recommended by Ziemssen and especially elaborated by Leube It is expressed by Ewald in the following words "I know but one form of treatment which holds out prospects of success and this is the rest cure by which the stomach is protected from all irritating factors as a broken bone is immobilized in plaster "

Now, the surgeon does not draw a line of demarkation between an ulcerated, broken, bruised or simply inflamed limb Rest is the *sine qua non* treatment Go over in your mind the whole gamut of diseases of the stomach from a simple inflammation of the mucous membrane to solution of continuity, and you will find that the process, both pathologic and reparative, is the same Why, then, not apply among other things the same remedy? I have done so and nature has rewarded me most generously

How can rest be applied to diseases of the stomach and intestine, will be asked It is true you can not put these organs in splints, but you can, by using one or all of the following methods, secure rest 1 Rest in bed 2 Diet 3 Hot poultices

1 *Rest in bed*—In severe cases I follow the method of Weir-Mitchell to the letter 1 Absolute rest in bed Sitting is not allowed under any circumstances The bowels are regulated, the bed pan is used 2 Sponging the whole body every morning 3 Isolation 4 Massage I have not had yet a case that required electricity In milder cases I use my judgment as to isolation and massage

2 *Diet*—In many severe cases of gastro-intestinal disorders the best bill of fare is abstinence One, two or even three days' fasting will do no harm in cases of ulcer, dyspepsias, and diarrheas of all kinds and varieties Nutritive enemata can be employed in cases where a longer period of fasting is necessary When food by the mouth is allowed it must be given in small quantities, no matter whether liquid or solid, and at regular intervals Every case must be individualized as to the quality and quantity of food

3 *Poultices*—I shall not attempt to formulate a theory as to the action of poultices Whether the poultices hasten the expulsion of food from the stomach as has been shown experimentally by Fleischer, or they cause the acceleration of the circulation of the blood in the [illegible] is not yet definitely se[illegible] I [illegible]rtain, [illegible] thing, and th[illegible]

ments of the stomach, they make the patient feel comfortable and keep him warm and at rest *The poultices take the place of splints* In severe cases the poultices are applied constantly during the day for one and two weeks In milder cases from four to eight hours daily

The time allotted to me does not permit me to enter into details Each of the three forms by which rest of the gastro-intestinal tract may be secured would require a separate essay I will therefore limit myself to the recital of the histories and results of a few cases which have undergone the rest cure

Case 1 —Referred to me by Dr J T Eskridge J H S, Plattville, Colo, aged 31 years, male, merchant Family history negative Had continued fever in 1887, lasting for two weeks In 1890 had influenza These two attacks left him in a weakened condition For the last years the following train of symptoms have developed gradually Headache almost constant, at times accompanied with pain in back, distress and heaviness after meals, burning sensation in stomach from one to two hours after ingestion of food, which is sometimes relieved by taking baking soda, oftener not Appetite is good, bowels regular, has not lost perceptibly in body weight, suffers occasionally from jerking and twitching of muscles, has attacks of despondency and melancholy and spells of crying, once in three to four days, sometimes at longer intervals, becomes dizzy when commencing his meals, sleeps well, suffers from nocturnal emissions quite frequently, attacks of frequent urination Physical examination of mouth, chest and abdomen negative, except a slightly coated tongue, and some tenderness over pit of stomach and transverse colon Repeated examinations of stomach contents after various meals, at various times revealed a total acidity varying from 90 to 140 Not being able at that time to absent himself from home and to take the rest cure, he was ordered to subsist on nitrogenous diet, he was given strychnin in small doses, sod bicarb after each meal, lavage every other day His symptoms were greatly mitigated The headaches diminished both in frequency and severity, he could concentrate his mind, his weight increased Yet he was not cured from the burning sensation in his stomach He had to take soda every day, and at times even large quantities would not relieve

Six months after he first consulted me he decided to try the rest cure In addition to absolute rest in bed he had hot poultices applied to his abdomen twice a day, cold sponging every morning and his diet regulated He was not given any soda, neither was his stomach washed The burning sensation gradually diminished and at the end of fourteen days he was entirely free from this annoying symptom Contrary to my advice that he remain in bed at least two weeks longer, in order to insure a permanent cure, he returned to his home He informs me (now one year after the treatment) that he is doing well, and that only within the last two months he has once in a while the recurrence of slight attacks of heartburn

Case 2 —J O, female, 24 years of age Married four years Has no children Parents healthy Was well until five years ago, when she had an attack of influenza which left her with a bad cough, and she gradually grew worse She came from Portland, Ore, to Denver two years ago She markedly improved For the last three months she commenced to cough and the expectorations were at times blood streaked Bloating and pressure after meals very annoying At first she vomited after meals once or twice a week, later it became more frequent Can not keep anything on her stomach for the last five days She has retained, however, her appetite for food She suffers from night sweats and violent attacks of coughing Physical examination revealed dullness over the apex of and scattered areas of moist râles heard over the left lung, anteriorly and posteriorly The stomach contents showed a great quantity of mucus and diminished acidity She was sent to St Joseph's Hospital, absolute rest enjoined and carried out No food was given for the first twenty four hours For the next two days she was allowed small quantities of somatose Hot poultices applied to abdomen constantly for first four days, then six hours daily Cod liver oil inunctions daily No medicines were given by the mouth, except a hypodermic injection of strychnin once a day At the end of four weeks she ate meat at each meal and drank two quarts of milk without experiencing any distress after, has gained six pounds in weight no night sweats, no harassing cough She became pregnant five months after she was discharged, miscarried on the third month, and at the time of this writing, fourteen months after the treatment continues in good health

Case 3 —Referred by Dr S A Fisk J H P, 25 years old, student Father's mother, and sister of patient died of lung trouble Has had lung trouble for two years Dr Fisk informed me that he has "considerable infiltration on the right side of his chest, and some beginning on his left, a mitral systolic lesion with a slightly enlarged heart" For four months suffers from diarrhea, has from four to five watery stools daily No pain in abdomen, appetite fair Pulse 110, temperature elevated in the afternoon

Treatment —Absolute rest in bed No food for twenty four hours Somatose for two days, and after that scraped meat and kephir For the first five days gave orphol in five grain doses, and washed the bowels twice After that gave strychnin, one thirtieth of a grain three times daily He was in bed three weeks The diarrhea never returned Four months after he was discharged Dr Anderson of Colorado Springs, referred him to me for the examination of his feces, which contained some peculiar extraneous matters As his feces did not contain at that time anything peculiar, I have examined a specimen under the microscope and found numerous ova of tænia solium By appropriate treatment have removed without any trouble a tape worm The patient is now (twenty months after treatment) in Switzerland and has not had an attack of diarrhea since

Case 4 —Referred by Dr Clayton Parkhill F F, 44 years old, female Father subject to rheumatism, mother died of a paralytic stroke On Dec 7, 1896, noticed a growth in the left breast, which was diagnosed by Dr Parkhill as cancer, and which he removed Six weeks after the operation commenced to feel pain in the epigastric region, aggravated by taking food, which continued for the last five months Belches a great deal Appetite fair, bowels costive No nausea, no vomiting, no heartburn Test meal found well digested HCl present.

Treatment —Rest in bed, poultices to abdomen Meat diet and kephir Nux vomica fifteen drops three times daily The pains gradually subsided, and after three weeks she left the hospital cured

Case 5—Referred by Drs Eskridge and Wetherill E S, 42 years old, female, single Family history negative At 9 years of age she had scarlet fever, since which time all her troubles date She had attacks of dysentery periodically Intense headache, front and nape Frequent attacks of diarrhea preceded by pain in intestines, usually over colon Great irritability in rectum and bladder In 1891 had a cystic tumor removed from her right breast. In June 1894 had her uterus scraped, which relieved in a measure the irritability in the bladder and rectum Four months after the operation a tape worm was removed In February 1895 hysterectomy was performed and the right ovary removed The annoying symptoms were not abated in the least. In June 1895 right nephrorrhaphy was performed In September 1896 she came under my observation, Dr Wetherell having, after careful examination, refused to operate on her rectum, which he found in a normal condition After watching her symptoms for some time I have come to the conclusion that she suffers from membranous enteritis, and probably has suffered from the same malady all her life Her treatment consisted of absolute rest in bed, hot poultices to abdomen, and high irrigation in colon with a solution of resorcin Her diet consisted of meat, kephir, bread and plenty of butter She showed marked improvement from the start, and life was no longer a curse to her I can not claim that she is entirely cured The pains in her abdomen recur once in a great while, and she then sheds a good amount of membrane, but the intervals of freedom from pain and annoyance are long, sometimes lasting four and five weeks, and the attacks are never as intense She has taken three courses of rest cure, each continuing five, four and three weeks respectively

Case 6 —Referred to me by Dr D H Coover D H C, 38 years old, married Father and mother of gouty disposition Enjoyed fair health when a girl Having resided in a malarial region, she suffered from intermittent fever For the last fifteen years suffered intensely from pain in abdomen and diarrhea She was never free from pain more than a few days at a time, suffered from neuralgic pain in head and sciatic nerve As far back as 1885 she noticed in her evacuation shreds of mucous membrane, sometimes a full cast of the bowel During the last few months the pains became unbearable, she could not sleep, was despondent and very miserable She came under my notice June 1897

Treatment—Rest cure absolute, hot poultices No food for the first twenty four hours, and small quantities of somatose during the next four days High irrigation of the bowel, with resorcin solution at first every day for five days, then once a week, five grain doses of orphol At the end of the first week she was rewarded for her enforced rest by having a spontaneous, well formed stool, an event which has not occurred for many years She remained in bed for three weeks Four weeks after she had a slight relapse and was again ordered to remain in bed, and this time she remained for about four weeks At the time of this writing, one year after the rest cure, she is in good health , has not had a single attack of diarrhea or abdominal pain

Case 7—Referred by Dr S A Fisk R. S , 39 years old , female , Mexican Three years ago had a bilious attack—headache, diarrhea and vomiting, lasting for one day Since that time suffers from diarrhea Has one well formed stool every morning, and four to five evacuations during the day, the last stool usually containing some mucous and shreds of membrane She has never had a movement during the night Stools are watery and very offensive She has no pain in abdomen, no pressure or distress Has lost twenty pounds in weight since her first attack Took a course of treatment in Carlsbad and Paris, with only slight and temporary relief She came under my treatment in September 1897 I have pursued the same course of treatment as in No 6 Being of a highly nervous temperament, as soon as the diarrhea stopped she left for Tucson, Arizona, where she kept up the rest cure for some time Dr Rodgers of Tucson, under whose care she was, writes to me that she has no diarrhea and that her stools are perfectly normal

Case 8 —Miss M G , 27 years old , medical student. Parents healthy She enjoyed good health until within six months when she commenced to feel pain in her stomach after meals Pain is localized, aggravated by pressure and by taking food, and even water The pain grew gradually worse, and her physician had recourse to opiates No nausea, no vomiting, no heartburn, no belching, no headache Appetite good , bowels regular HCl 80 She remained in bed only ten days, as she was anxious to come up for examination in May (1898) Hot poultices were applied six hours daily Somatose given during the first three days, and later small quantities of milk and lime water every half hour At the end of the ten days she was free from pain At the time of this writing, four weeks after the rest cure, she complains of slight pain once in two or three days

Case 9 —Referred by Dr Mullin of Aspen, Colo M. B , 52 years old, female, German. Family history negative Fourteen years ago had an attack of typhoid fever Seven years ago, immediately after drinking a cold glass of beer, was taken sick At first she felt as if there was a load in her stomach, which continued for several days She suffered on and off from abdominal pain, since In 1893 had severe pains, and her physician washed her stomach and put her on a milk diet, which relieved her very much Whenever she would have an attack this mode of treatment was employed with success In January 1898 had influenza, and since that time the condition of stomach became worse Pain is aggravated by taking food, by exercise, and is worse toward evening The pains are especially severe from 8 to 11 P M No headache Appetite fair Bowels have been always regular , constipated since the attack of influenza She came under my treatment May 14, 1898 The stomach contents revealed nothing abnormal On palpation a tumor was found in the right abdominal cavity, movable on respiration, and making excursions from under the ribs down almost to the brim of the pelvis The diagnosis of a movable right kidney was substantiated by Dr C A Powers

Treatment—Absolute rest in bed, hot poultices, massage, cascara sagrada (Stearn's) for the constipation, and strychnin The pain gradually diminished After the first week she has not had a single severe attack Sleeps well Her appetite is excellent, and if she remains in bed for three weeks longer, I expect,[1] that with an abdominal bandage so fitted as to keep the kidney *in situ*, she will remain comfortable through her life

ANALYSIS OF THE CASES

I have chosen from my records of over one hundred cases treated by rest-cure during the last two years these nine cases with a view of illustrating the groups of diseases wherein I found my method to give satisfaction

Case 1 represents a type of hyperacidity upon a nervous basis Washing of the stomach and alkalies were of no avail Being a case of neurasthenia with hyperacidity only as a predominating symptom, rest logically suggested itself to my mind

Cases 2 and 3 represent the usual type of tubercular patients, the first suffering from vomiting, the other from diarrhea, both conditions being analogous, and only differing from one another as to the seat of the irritability in the digestive tract To let such patients eat, drink and walk about is simply to add insult to injury All around rest for body, stomach and intestine is clearly indicated

Cases 4 and 9 represent types in which the suspicion of cancer is very strong Case 4 had a cancer removed from her breast and case 9 had all the symptoms diagnostic of cancer, her age, the constant pain, the emaciation The first case proved to be a severe dyspepsia, the other a floating kidney

Cases 5, 6, and 7 represent various types of enteritis It is my belief that through a mistaken diagnosis case 5 was unsexed and otherwise mutilated

Case 6 convinced me that all cases of enteritis without an organic lesion are amenable to treatment, and case 7 presents a point of interest that membranous enteritis does not necessarily follow the letter of the text-books, and may be present without severe pain

Case 8 represents a type of cases in which the diagnosis of ulcer or erosion of the stomach is very probable but not certain The age of the patient, the localized pain increased by pressure and by the taking of food, and the slight hyperacidity all point to ulceration or erosion The diagnosis may be doubtful, but the beneficent result of the rest treatment is certain

CONCLUSIONS

1 It is indicated in all dyspepsias, the underlying cause of which is a deranged nervous system

2 It is indicated in all cases where abdominal pain is present

3 In all cases of acute and chronic diarrhea

4 In hemorrhage from the stomach or intestines

5 In all cases of moveable or floating kidney

6 In all tubercular cases suffering from disturbed digestion, be it stomach or intestine, and especially those that have a vacillating temperature record, and as there are but few cases of tuberculosis that do not suffer from some form of gastro-intestinal disorders, the rest cure is indicated in 50 per cent of all cases of tuberculosis Not only are they relieved from their annoying digestive symptoms, but their general condition markedly improves

7 I have yet to learn of a disease of the gastro-intestinal tract where the rest treatment is contradicted

I will close my paper by a quotation from Hilton's "Rest and Pain," which I have altered somewhat to meet the occasion "In all diseases of no matter what nature, of the gastro-intestinal tract, when the evidence of disease is in organic lesion or in deranged function, it becomes our duty to look upon and treat the altered structures as we do contusions and laceration of soft parts and congestion of organs in any other part of the body, and to give the stomach and intestines absolute rest, to rely on nature's power to repair the injury or disturbance, and to avoid stimulants, which excite rapid circulation as much as possible The stomach and intestines disturbed in their vital endowment become unequal to even their ordinary duties They recover [illegible] slowly, they then soon become fatig[illegible] nd if c[illegible] are made upon them so[illegible] is, [illegible] structure and physi[illegible] the patient is very lik[illegible] s ease of the alimentary tract The stomach, as well as *the intestines, requires absence from occupation, rest,* and it should be in proportion to the severity and duration of the symptoms they present"

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[1] My prognosis came true Patient was discharged cured July 1

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DISCUSSION

Dr H M McConnell of Pennsylvania—I do not think there is any class of cases that require rest so much as diseases of the stomach Rest of this organ means physiologic rest The only way to obtain this rest is to abstain from food entirely and this can only be done to a very limited extent, when it can be carried out at all When the Doctor gave the history of his cases he did not say what they were being treated for, in some cases it is injudicious to give nitrogenous food Some symptoms are due to auto intoxication, and you must improve digestion in treating these cases Take ordinary typhoid fever, a patient that takes three or four pints of milk a day is not giving the organs physiologic rest. When you take into consideration imperfect digestion most cases of neurasthenia are cases of auto-intoxication Physiologic rest is very important.

Dr Tyson of Philadelphia—In speaking upon the rest treatment of gastro intestinal troubles the Doctor has spoken of the one thing that will do more or less good in every case of these troubles, the application of therapeutic measures in these gastro intestinal troubles is more or less haphazard Those who look into the subject do not receive much assistance so far as therapeutic measures go I hope the time will come when accurate methods will produce more satisfactory results In comparison to the rest treatment of the stomach, the Weir Mitchell method is rather analogical In my experience food is not such a necessary factor in the treatment of these conditions as many would imagine A patient may go one, two or three days without the ingestion of food, if he is in a position not to demand any force, food is a force producing agent largely

Dr H A West of Galveston, Texas—The scope of Dr Spivak's paper is very comprehensive, because the gastro intestinal canal undergoes serious involvement in nearly all infectious diseases, such as rheumatism, scarlet fever, measles and diseases of that class, in which the processes of digestion are seriously involved Rest treatment is of supreme value, not only rest so far as can be accomplished by rest in bed, but by other means And especially as regards acute rheumatism, the prognosis in this disease as regards the subsequent cardiac complications can be made less or even averted by such a plan of rest in bed The whole subject is so comprehensive that one can not discuss it in the five minutes allowed him One point would require modification—as to the necessity of rest in all cases of tuberculosis If the rest in these cases is limited to the organs of digestion and to the proper regulation of the diet, then I agree with the Doctor, but the large proportion of cases is benefited by exercise in the open air

Dr Spivak of Colorado—I have little to say in addition to what I have already said I am thankful to Dr Tyson for taking up the defense I read the paper not so much to relate to you the nine cases as to urge upon you the necessity of rest in these cases I wanted to arouse interest in the profession to one of the best methods that can be used and one which nature employs to cure disease I have been interested in this subject many months I am sorry that the facilities of the library here does not permit of more extended research on this subject, there are only fifteen or eighteen papers or monographs in the whole literature on the subject of rest. I have not found one school that treats of the subject of rest in gastro intestinal disorders I have seen good results in many cases and in none have I seen any harm result In regard to tuberculosis, I did not mean to say that all cases should be treated by rest in bed, I said that those cases that were suffering from fever should go to bed My opinion is based upon a good many cases observed They feel a great deal better in bed than they do after a walk Every patient who has a fever, when he exerts takes something away from his strength Furthermore, I stated that patients who suffered from diarrhea or vomiting should also go to bed I limit these cases where rest in bed is indicated in tuberculosis where there is temperature, diarrhea and vomiting

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DILATATION OF THE STOMACH, WITH REPORTS OF CASES TREATED BY DIET, MASSAGE AND INTRAGASTRIC ELECTRICITY

Presented to the Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Colo, June 7-10, 1898.

BY BOARDMAN REED, M.D
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There has been a tendency of late among writers to regard enlargements of the stomach as of little or no consequence, unless very excessive and complicated by such a degree of muscular weakness as to render the organ incapable of emptying itself at any time during the twenty four hours Some recent authors do not give any place to dilatation of the stomach as a distinct or separate entity, but describe it incidentally under the heads of motor insufficiency and obstruction at or near the the pylorus, on the ground that it is a mere sequela or consequence of one of these But, notwithstanding the high authority which exists for a contrary view, the writer insists that there is a normal size for stomachs as much as for hearts, and that any notable enlargement of either, plus decided insufficiency, constitutes dilatation It is granted that it is not in either case a primary disease, and also on account of the enormously disturbing influence of unhygienic diet and dress, stomachs do differ very widely in size within so-called normal limits, but even the cases called megalo gastria by Ewald,[1] in which in consequence of excessive eating or drinking the stomach is often found twice the usual size without indigestion, are no more normal than are hypertrophied hearts in which the circulation is well maintained The enlarged stomachs which have not yet dilated are, in fact, very frequently a cause of other pathologic conditions and of symptoms both direct and indirect, especially by displacement of the uterus

But to follow up this line of discussion would lead too far afield The object of this paper is to show the amenability to treatment of a certain class of cases in which the stomach as a result usually of hygienic errors, often dating from faulty feeding in infancy, has become decidedly enlarged and weakened, cases, which while much less serious than those dependent upon pyloric obstruction, have been considered rather refractory to our usual therapeutic measures, if not quite incurable The preponderance of such cases as well as of gastroptosis in women, even in young unmarried women in whom child bearing can not be invoked as a cause, points to the probability that their mode of dress is a factor in the etiology

Ewald[2] says "I understand dilatation of the stomach or gastrectasia to be that condition of the viscus which is accompanied by the clinical symptom of disturbed gastric function due to the enlargement of the organ" This definition will answer perfectly well for the purposes of the present discussion

Mathieu's[3] division of atonic dilatation into "temporary" and "permanent" can not be accepted, since experience teaches that by our latest resources, including intragastric electricity and abdominal massage, with the help of diet, exercise, and in bad cases, lavage, all the atonic forms of dilatation can at least be greatly improved The mildest cases and some of the worse ones, will often yield to diet and exercise alone The more severe ones, including even those of long standing and those complicated by gastritis, will usually improve greatly upon a careful, non-fermentable diet,[4] lavage, special exercises for strengthening the abdominal muscles and either massage of the abdomen or intragastric electricity, the choice being dependent upon the activity of the secretion of the gastric glands Massage suits best when there is a deficiency of the gastric juice and is apt to aggravate when there is hyperchlorhydria, as pointed out in a previous paper by the writer[5] This aggravation is especially to be apprehended from a deep, thorough kneading

Intragastric electricity in the form of a strong faradic current is very efficient in strengthening the weakened gastric muscle and in contracting the dilated organ As mentioned by me in a former contribution, in which is described a new intragastric electrode,[6] it will, in suitable cases, often cause a retraction of the lower border of the stomach to the extent of a full inch at one sitting, demonstrating beyond cavil that it does stimulate the gastric muscle directly, and in a most positive manner Of this marked retraction each time only a small part persists, but in the pure atonic cases it has been usual to see a permanent gain of from one to two inches as a result of twelve to twenty treatments given from five to eight minutes at a time on alternate days Some cases treated every day responded even more rapidly, but my experience points to the need of caution in this respect, as in some of my cases there was at the same time rapid lessening of HCl, and later, after this had gone below the normal, there resulted nausea, loss of appetite, etc, from the further electric treatments, showing over-stimulation and depression of the glandular function

On the other hand, in two cases of chronic gastritis with deficient secretion and enormous dilatation, similar treatment along with lavage, massage and the administration of HCl internally were followed by an increase in the amount of the secretion, at the same time that the stomach contracted But in these the gastric mucosa was manifestly less sensitive and could better bear the powerful direct stimulation required to contract the muscular walls In one of these two cases the increase was temporary and the proportion of HCl declined again during the further treatment, in the other one a small family battery was used at the patient's house, not the stronger apparatus with high tension coil employed in my other cases

I have not tried the experiment of giving small doses of intragastric electricity to increase the action of the glands, since abdominal massage and hydrochloric acid administered as a remedy are sufficiently effective for this purpose, and much pleasanter, but I do not doubt that faradism applied in this way would prove a safe glandular stimulant

Fifteen patients in all have received intragastric electricity from me Twelve of these had enlarged stomachs with more or less muscular insufficiency One of those residing at a distance has received only two electric treatments at long intervals and no result in this case could yet be expected In all the remaining eleven there has been a decided reduction in the size of the stomach, with an increase in the motility In one of these, a case of hypopepsia with aggravated neurasthenia, the intragastric method had to be suspended at the end of a week on account of increasing nausea and anorexia The various forms of electricity used externally, together with massage, being persevered with produced in this case results as favorable as were obtained in any of the others The stomachs of several of the eleven are already normal so far as regards their size and motor functions It will be of interest to add that eleven of the fifteen cases had either a normal or excessive secretion of HCl at the beginning of treatment by intragastric electricity, and that in nine of these a decided lessening of such secretion was noted by the end of two to four weeks In one only of these eleven cases there was an increase of the HCl In the eleventh case no opportunity has yet been offered for making a second analysis of the stomach contents

The form of special excercise prescribed for most of my patients with dilatation of the stomach is the use of sets of the now familiar pulleys with elastic cords I have found no other exercise, unless it be rowing, so useful in developing the abdominal and trunk muscles generally

In the following reports one or more have been selected as specimens of each of a class of cases These include

1 Cases treated by diet and exercise, with in some instances tonic medication

2 Those treated by the same methods plus massage

3 Those treated by diet, exercise and intragastric faradism

4 Those treated by the foregoing combination of remedial measures in addition to general massage, with sometimes very light effleurage of the abdomen, avoiding all kneading over the stomach Lavage was added to the treatment in most of the cases in which there was much stagnation or chronic gastric catarrh The diet has been shaped to suit the various indications present, especially the state of the gastric secretion Particular care has been exercised to have the patients with atonic stomach walls avoid eating o large meals and to take never m[illegible] half of fluid with each meal, inclu[illegible] th

been allowed, and, except in the worst gastrectasis, urged to drink water often between meals, though never more than one glassful at a time

The great majority of these enlarged and weakened stomachs by the time they have come under methodical treatment have developed some degree of inflammation of the mucous membrane One of the familiar types of chronic gastritis has been set up More often than otherwise, as seen by me, the gastritis has been accompanied by either a normal or excessive secretion of HCl, and it is worthy of note that catarrhal inflammation with much mucus, rapid multiplication of bacteria, especially yeast fungi, and excessive fermentation, proves more difficult to overcome than the other morbid conditions In other words, I have found it easier to strengthen and contract an atonic, dilated stomach and to relieve an accompanying hyperchlorhydria, when present, than to cure the coexisting gastric catarrh One reason for this is that patients rarely are willing to continue treatment after they have ceased to suffer much inconvenience, and when both the motor function and the secretion of the gastric juice have been brought to the normal, the remaining catarrh usually produces few symptoms, though a low grade inflammatory process lingers The patients considering themselves virtually well, abandon treatment and then, even if they do not drift back into their former faulty habits, as they are so prone to do, there is a tendency especially in those past middle age or at any age with poor reparative powers, for the remaining foci of disease to persist and to increase again upon the slightest provocation

Case 1 —Lady, married, aged 45, has been under my care for the past year on account of chronic gastric and duodenal catarrh, with greatly deficient secretion of HCl and marked dilatation of the stomach, complicated by slight gastroptosis, and also by violent attacks of gastric pain This case is fully reported in another paper to be read at the present meeting of the Association before the Section on Materia Medica and Therapeutics, but a brief account of it will be of interest in this connection The patient residing at a distance from the city, in a town where there was no masseuse, and being unable to remain under my immediate care, the treatment was necessarily limited to diet and internal medicines mainly She was required to eat moderate meals only, never overloading the stomach, and to avoid especially sugar, fried things, nuts, shell fish, except raw oysters, and hot or fresh bread Her medication comprised HCl and pepsin on account of the marked deficiency of the gastric juice, and during part of the time small doses of nitrate of silver in pill form She received no massage or intragastric electricity By the end of a year the lower border of her stomach had retracted fully two inches at the same time that the proportion of HCl and of the ferments had returned to about the normal Her painful attacks had also ceased to recur

Case 2 —Unmarried lady, teacher, came under treatment in the autumn of 1897, complaining of chronic indigestion with almost daily vomiting and headaches This case was referred to me by Dr Samuel Bolton of Frankford, and is also reported in the paper above mentioned, to be presented before another Section at this meeting of the Association The salient facts will be very briefly summarized here Upon beginning treatment there was moderate dilatation as well as chronic gastric catarrh and hypopepsia The lower border of the stomach was a half inch below the level of the umbilicus and the motility was poor When she last consulted me April 9 1898 her stomach had retracted to within normal limits and the percentage of HCl and of the ferments was fully up to the normal There had been no vomiting or headache for three months The treatment had been diet, much the same as in Case 1, and the administration of HCl and pepsin mainly She had also been taught to wash out her own stomach and had done this every day at first, and latterly two or three times a week

Case 3 —A gentleman, aged 53 has been under observation off and on for the past four years. When he first consulted me he had some acid gastric catarrh, with occasional transient attacks of catarrh of the small intestine, and constipation His stomach walls were very atonic and the organ extended to the level of the navel, with weak circulation and neurasthenia Diet and medication at first accomplished very little except to lessen the catarrh and resulting fermentation During the past winter systematic autolavage was practiced by him for several weeks on alternate mornings, and by means of this, together with a judicious administration of a pill of extract of belladonna and extract of yerba santa (the latter being an excellent sedative apparently to all the branches of the pneumogastric) varied occasionally by giving full doses of alkalies, the catarrhal process was greatly benefited and the HCl secretion reduced to the normal at the same time that the stomach began to lessen in size Massage, both abdominal and general, was then added to the treatment and continued almost daily for one month Later the patient learned to massèe his own abdomen, and has since continued it His stomach is now (May 15) within normal limits, the lower border being fully two inches above the navel and no splash is obtainable, even after drinking a glass of water Bowels moved now easily with gr one tenth of aloin Exercise with the pulleys has been practiced though not very regularly

Case 4 —Unmarried lady, aged 25, came under my care first in Atlantic City in the summer of 1897 History of some obscure stomach trouble for six years and for a year or more past patient has had dull pain and nausea nearly every day, coming on soon after eating with frequent attacks of severe gastralgia, and occasionally marked vertigo She was plump, well nourished and of good color, in spite of extensive atonic dilatation and very aggravated chronic gastric catarrh The upper boundary of her stomach was in the normal place while the lower border was three to four inches below the level of the umbilicus as shown by percussion, the splash and the gastrodiaphane The stomach was never found empty except before breakfast and not always then There were the usual signs of stagnation and excessive fermentation of food Microscopic examination showed the stomach mucus to be swarming with yeast fungi There were occasional attacks of acute intestinal catarrh, which yielded with difficulty, and always violent pelvic pain at the menstrual period Large and repeated doses of anodynes had been required for the dysmenorrhea and often at other times for the gastralgia The stomach was washed out and a strict diet was enforced Intragastric electricity in the form of a mild galvanic current—M A 5 to 10, the positive pole inside and negative pole in the form of a large flat electrode placed over the stomach—effected more relief to the gastric pain than any other agency But the relief was temporary The stagnation and excessive fermentation in a very largely dilated stomach were clearly the chief causes Finally lavage was regularly employed and the high tension faradic current in as strong dose as could comfortably be borne, was used on an average every second day for at first ten minutes at a time, but later on this dose having seemed excessive, the time of each sitting was limited to five minutes There had never been any free HCl in the stomach since the patient had been under observation though the T A an hour after a test breakfast was usually 50 to 60, representing largely fermentation products After the intragastric faradism had been continued for several weeks a trace of free HCl once appeared in the gastric contents, but none has ever been found since

Under this energetic treatment, continued more or less regularly for three months, the stomach walls gradually contracted and now the lower border is just above the level of the umbilicus There was, however, during the latter part of the time that the intragastric faradism was being used regularly, a loss of digestive power and a return of nausea, vomiting and dizziness, symptoms which had previously troubled her much, but had been greatly relieved by lavage and restricted diet During the last two months the latter measures have been relied on chiefly, with some help from external electric applications, and the patient, while retaining the gain in the size and motility of the stomach which the intragastric faradism helped to effect, *is continuing to make satisfactory progress in other* ways There is no more nausea, less dizziness, and greatly less gastric pain, though there is still some mucus secreted daily in her stomach A highly nervous temperament has complicated the case, and lack of means to obtain massage treatment has been an unfortunate embarrassment A retraction of fully three inches in the size of such a seriously dilated stomach is, however, a striking evidence to the power of intragastric faradism in such cases

Case 5 —Widow aged 64 resident in a neighboring city, came under treatment Oct 13, 1897, with complaint of cardiac palpitation and flatulent dyspepsia dating back a year or more She had been troubled much longer with constipation and occasional headache A strong, active, energetic and well nourished woman weighing 150 pounds she complained of a painful dragging in the abdomen in walking, especially in going up stairs Examination revealed an exceptionally sound strong heart of normal size, with normal lungs and liver, and kidneys not displaced, but her stomach was enlarged from the usual level above to three and a half inches below the umbilicus The usual tests showed only a little motor deficiency, and a small, mixed meal would leave the stomach in four to five hours, yet there was an abnormally loud and large splash after drinking a glass of water, and this together with the sensation of weight and dragging after meals, pointed to the fact that the enormously enlarged stomach was not in a proper tonic condition as to its musculature, or to use the cardiac phraseology, that there was hypertrophy, with some dilatation The analysis of the stomach contents revealed marked hyperchlorhydria and a large amount of mucus with other signs of chronic acid gastric catarrh

The treatment at first consisted mainly of remedies to reduce the hyperchlorhydria, and simple, plain diet, as little fermentable as possible, with lavage when she could come to the office, which was only at long intervals Later she came to the city and began a more systematic treatment Intragastric faradism was now given on alternate days—sometimes every day—with the result of rapidly contracting the stomach The action on the glandular function was less favorable than in any of the other cases When the sittings were daily for five minutes during one week there was a decided increase in the percentage of free HCl, the only instance in which this resulted in my experience, in a case of hyperchlorhydria There was also nausea after the latter treatments Massage was thereupon ordered instead This was given vigorously over the body generally, but very lightly over the abdomen—little more than effleurage Lavage was also given every morning for a while, and later every other morning before breakfast. The hyperchlorhydria was not reduced so readily as usual, requiring a pill of belladonna and yerba santa to be continued for some time before coming under control The lower border of the stomach now, May 15, is one inch above the level of the umbilicus, when the patient stands after drinking a glass of water This is a reduction in size of over four inches The gastritis is also greatly improved The patient is still under treatment

Case 6—Widow, aged 38, has been for years a sufferer from indigestion and neurasthenia, dependent upon acid gastric catarrh, dilatation of the stomach and a right floating kidney There has been a remarkably relaxed condition of her tissues in all parts of the body, and yet singularly, she is almost the only lady patient seen by me with a marked dilatation of the stomach (or with gastroptosis) who has not had at the same time a displaced uterus She had been under the professional care of various specialists on account of these ailments During the past year and a half she has consulted me with more or less regularity In the winter and spring of 1896-7, she made some little favorable progress as a result of diet, physical culture, massage, occasional lavage, and treatments by galvanism to the spinal and abdominal centers But she returned to her home in a distant city during the summer, and while there suffered quite a relapse December 10, 1897, intragastric faradism was begun and given, as a rule, three times a week till April 11, 1898 Massage was continued meanwhile daily but by an unskilled attendant, and lavage was given two or three times a week. When the intragastric electricity was begun her stomach extended from the normal position above, to three and sometimes four inches below the level of the umbilicus During the first three months of this treatment there was less improvement than in any of my other cases The lower border of the stomach was still below the navel, but on persevering another month with all the measures and in addition administering full doses of a compound containing nucleo albumins and bone marrow, she began to improve more rapidly Now, the lower boundary of her stomach is one inch above level of the umbilicus, and she is stronger and better than for several years

The percentage of free HCl, formerly a little excessive, has been lowered somewhat below the normal, but there has been no nausea or other noteworthy disturbance of digestion by the unusually long treatment of intragastric electricity

There have been conflicting reports from other observers as to the effects of intragastric electricity, both on the muscles and glands of the organ One denies that contractions of the stomach walls can be produced in this way My cases, 4, 5 and 6 above reported, are therefore of especial interest taken in connection with the preceding summary of the results in all of the fifteen cases in which I have employed direct electrization of the stomach They certainly establish beyond further question the fact that the motor function of the stomach can be powerfully stimulated by this means

As to the effect upon secretion, the results above cited seem to indicate that this probably depends upon the dose and upon the degree of reaction In the dose of faradism necessary to produce efficient muscular contractions there resulted in all except one of the cases with a normal or excessive percentage of free HCl a depression of the secretion In cases of gastrectasia with chronic gastric catarrh and very deficient secretion, it agreed better than in most of the others, and in one of these, not reported here in full, the current from a cheap family faradic battery, with a coil of coarse short wire and not very rapid vibrator, applied through the intragastric electrode, seemed to help materially, along with massage, lavage, etc, in restoring the lost function of the glands, as well as in contracting the seriously dilated stomach It is probable that the very slowly interrupted faradic current would effect contraction in this way with less risk of over stimulating the glands, and I shall try this in my next suitable cases

Too much emphasis can scarcely be placed upon the importance of these comparatively simple and safe methods of curing or ameliorating atonic dilatation of the stomach Large numbers of persons suffering from this serious condition are permitted to go without any efficient treatment, while others are submitted to the new surgical operation known as gastrorrhaphy or gastroplication, designed to reduce the size of the viscus This may be necessary in extreme cases, but surely all other practicable means of relief should first be exhausted

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THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE DUODENUM BY DIRECT METHODS

Presented to the Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association, held at Denver, Colo, June, 7 10, 1898

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The use of the gyromele in the diagnosis and treatment of intestinal diseases is now so well known by the profession that it would seem hardly necessary to describe the method, but as more work is being accomplished and new facts learned it is destined to add to our knowledge of the physiology and pathology of the gastro-intestinal tube The gyromele as made for diagnosis, and treatment of the esophagus, stomach and intestines is modified for each part of the alimentary tube to which it is applicable, and also for the various kinds of uses in both diagnosis and treatment The gyromele as is well known is composed of three essential parts The cable with a spiral attached to one end and to the other end is attached an instrument for producing revolutions of the cable and spiral To the end of the spiral is attached a sponge or bulb or both as required The cables are made of different lengths and degrees of flexibility adapted for either the esophagus, stomach or intestine When used for sounding the esophagus short cables Nos 1 and 2 of 60 to 70 cm in length and of 2 degrees of flexibility are used

The spiral attached to the end is short, ending with a bulb or sponge as the conditions of the case require Various sized bulbs can be attached as in ordinary esophageal sounds The principal advantage found in this instrument is that the revolving sponge when it passes into the stomach can be palpated upon the abdominal walls, proving that it has passed the cardiac orifice It is for this reason that the gyromele with a long cable and spiral 120 cm (or longer) is of such value in passing through the stomach and pylorus into the intestines that in palpating the revolving sound upon the abdominal walls, we gain positive knowledge in locating the viscera By aspirating through the tube which covers the cable we can obtain the contents and reach the parts safely under the observation of the palpating hand The vibrations may often be seen as well as felt and by the introduction of water or air or both reach a confirmation in diagnosis that could not be accomplished by any other way, and further, we are enabled to carry out a line of treatment by direct methods

Kuhn has recently devised an instrument for sounding the stomach and duodenum, but this is simply a modification of the gyromele Hemmeter has devised a method of ballooning the stomach and passing a tube along the upper borders of the inflated bag within the stomach This method I have not had any experience with but it appears to be ingenious and of practical value In the *Centralblatt for Innere Medicin*, No 9, 1898 (Turck, Die Prioritat der Sondirung von Osephagus, Magen und Eingeweide mittels der Gyromele, biegsamen Revolversonde), I have given the literature on sounding or intubation of the duodenum

Method of Introduction —The cable enclosed in long rubber tube is passed into the stomach in the same manner as in the introduction of the ordinary stomach tube When the stomach is reached the revolving apparatus is attached to the outer end of the cable, and revolutions are produced The vibrations of these revolutions are palpated upon the abdominal wall and as the gyromele is pushed along the greater curvature it reaches the pyloric end of the stomach, which may be indicated upon the abdomen by outlining with a pencil By carefully pushing the instrument further an obstruction may be observed which after a moment's delay will disappear and allow the end bulb to pass through the pylorus into the duodenum or further into the jejunum In case there is much retching or contraction of the abdominal muscles the end bulb and spiral may be deflected across the antrum pylorica, and reach the lesser curvature instead of passing on through the pylorus This may be detected by palpating the revolving sound The instrument may then be slightly withdrawn and under the palpating hand pushed onward again until the pyloric orifice is reached and then pass into the intestine

Method of withdrawing contents and introduction of air or water into the intestines —When it is desirable to aspirate fluid from the intestine the upper end of the tube is closed by a rubber cork through which the cable passes and is thus made air-tight To the side of the rubber tube is attached a small tube, through which the fluid may be aspirated The contents thus may be used for chemic analysis and microscopic examination When desired fluid or air or both may be forced into the intestine and by inspection, palpation and percussion location can be confirmed When water is thus forced into the duodenum another tube can be passed into the stomach If no fluid is found there then aspirating the fluid back from the intestine through the gyromele will give further positive evidence that the pylorus has been passed

Treatment —The gyromele is used in the intestines for similar therapeutic purposes as in the stomach 1 The massage of the revolving sound produces an effect upon the entire vascular system supplying the intestinal walls By the reflex action of the vasomotor system of the splanchnic area is stimulated, not only through the massage or rubbing effect but the vibratory effect can be distinctly felt and has been observed experimentally upon dogs, their abdomen exposed, and during laparotomies upon the human subject, in which the changes in the circulation can be distinctly seen This has been previously reported by the writer and others 2 Cleaning the mucous membrane by removing the adherent material with the revolving sound and green soap, then washing out this loosened slime (decomposed remnants of food, necrosed and degenerated epithelial cells and other irritating material) originated with the writer and is unquestionably of the greatest value in treatment. 3 The application of antisepsis or other medicaments can be resorted to by topical or direct methods with exact dosage, such as the use of nitrate of silver, formalin, etc The entire mucous membrane may be coated with bismuth when desired 4 The use of the gyromele as an electrode is superior to other electrodes because the revolving sponge can be located anywhere over the abdominal wall and the application of electricity can thus be made at will to any desired part, as for instance, in cases of patulous pylorus The electrode may be inserted at the orifice and the faradic current used, or if indicated it can be passed on into the duodenum for the treatment of atony and vascular disturbances

It is not possible in all cases to pass it into the duodenum, benign and malignant tumors of the pylorus when complete may obstruct, or severe spasmodic forms of stricture The value in diagnosis is of similar importance to the esophageal sound in strictures of the cardia In cases where there is much vomiting and retching which may become so violent as to defeat the attempt at passing the sound, then the examination may be postponed for a day or so, when on another attempt it will be found that the sound may be introduced The contraindication for the use of the gyromele are the same as those of the stomach tube

In conclusion I wish to particularly call your attention to the diagnostic as well as curative possibilities of the gyromele in an hitherto unexplored field, and doing away partially with the exposure of our patients to the risks of the exploratory laparotomy, which has become such a fad in the past few years for all affections of the gastro duodenal region which do not readily yield to medicinal treatment By means of it (gyromele) we can with almost certainty diagnose an obstruction at the pyloric orifice or a relaxation of the same we can enter the duodenum and apply our medicaments as called for, we can obtain the various specimens of the contents (food, etc) for chemical, micro as well as macro scopic examinations and determine positively whether or not we are dealing with a pathologic condition of the stomach or of the duodenum

For want of time the cases will not be presented here but will be published later with a full report

CHRONIC DIARRHEA ASSOCIATED WITH ACHYLIA GASTRICA

Presented in the Section on Practice of Medicine at the Forty ninth
Annual Meeting of the American Medical Association
held at Denver Colo June 7 10 1898

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Among the causes of diarrhea the different conditions of the stomach that give rise to abnormal intestinal fermentation and irritation are of the utmost importance For many years a form of diarrhea termed lienteric has been described as being characterized by evacuation of the bowels immediately following each meal, the stools containing considerable undigested food Sometimes more than one movement follows a meal The explanation given for this a few years ago was that the food was hurried through the gastro intestinal tract with such velocity that there was no time allowed for its digestion While such an explanation is in part true it does not cover the phenomenon properly, nor satisfactorily account for the hurried peristalsis It was advanced by some that the food eaten for dinner, for instance, was partly passed from the rectum immediately after that meal It may be readily understood how this hypothesis was necessary to account for the undigested condition of the food in the fecal discharges, but no thought was had of the state of the gastric or intestinal digestive secretions It was not until the gastric secretions were studied, and somewhat more known of the motor functions of the stomach, that a better light was thrown upon this affection While it will be readily admitted that only a part, perhaps a minor part, of digestion is carried on in the stomach, yet it will be also confessed that the passage of much unchanged food from the bowels will not be likely to take place if the retention function of the pyloric sphincter is normal, and if concomitantly there exists an active secretion of gastric juice That this position is quite tenable is well illustrated by the fact that it is very seldom a diarrhea is observed to be lienteric provided the gastric function is correct There may be, and there often are, cases of more or less persistent diarrhea associated with a good condition of the stomach, but such cases do not usually present the characteristics of lienteria

When mixed foods are retained long enough in the stomach, and the chemical and mechanical changes incident to digestion in that organ proceed actively, the food is in a fair state of solution and comminution and will not likely pass through the small intestine without being so changed that separate food elements will for the most part have become unrecognizable If gastric secretion were normally active, and yet the pylorus were abnormally relaxed and patulous, food might be so hurried into and through the intestines as to appear unchanged in the feces, but such a state does not frequently exist, as the pylorus is exquisitely sensitive to active secretion, and the circular fibers are stimulated reflexly to properly protect the orifice and prevent the stomach emptying itself in undue haste On the other hand, if the gastric secretions fail and the gastric contents are not digested, whether they remain in the stomach a long or a short time, we have the most apt condition of affairs to give rise to lienteric diarrhea provided intestinal peristalsis is sufficiently hurried to prevent complete intestinal digestion, or provided the succus enterious is diminished or absent

In the gastric affection named by Einhorn "Achylia Gastrica," there exists a suspension of the secretions of the stomach, in some cases as the result of atrophy of the gastric glandules, in others as the result of a nervous disturbance of secretion It is probable that all cases of this affection do not arise from glandular atrophy For some years Stockton has maintained that the disorder often begins, and may continue, as a neurosis, and he has found a special form of ocular refractive error associated with it In writing upon "Gastric Anacidity" some years ago I also emphasized the suggestion that some cases perhaps commence as a neurosis and may go on to subsequent organic disease and atrophic changes Be that as it may, when the disease is once established the stomach is practically useless so far as chemical change of the food is concerned Finely divided, thoroughly masticated carbohydrates may undergo more or less digestion but albuminoids are not changed A remarkable absence of fermentation is observed in the stomach in this condition wherein there exists a state of affairs, one would say, should be well calculated to encourage fermentative and putrefactive changes

As is now well known, but little acetic or butyric acid is ever formed, even when much saccharine, starchy and fatty food is ingested Even in cases with poor gastric motricity and consequent delay in the passage of the contents into the duodenum, there is yet practically no fermentation This is the opposite of conditions prevalent in cases of gastrectasia and food stagnation from pyloric stenosis or in atonic dilatation

It should not be understood from what has just been said that food stagnation is never accompanied in these cases by putrefactive changes, as sometimes no doubt actively toxic substances are developed However, the point it is desired to emphasize is that symptoms of disturbance of intestinal digestion seem more troublesome and pronounced in cases of achylia gastrica than direct symptoms of the disordered gastric condition

As to the causes of diarrhea in cases presenting an absence of gastric secretion, they may be various One of the most important factors is the precipitate manner in which the stomach propels its contents into the intestine in a large proportion of cases It is sometimes found that the stomach is empty one hour after a full meal In some of Dr Stockton's cases complaining of no gastric trouble, but seeking advice on account of persistent diarrhea, this hurried emptying of the stomach was discovered The chronic inflammation of the gastric mucosa may extend into the intestines and thus give rise to diarrhea from chronic catarrhal enteritis, or the intestine may simply rebel from overtaxation, and by way of self-protection *expel its contents at the earliest possible* moment, or the diarrhea may be the result of intestinal irritation from [illegible] subst[illegible] oped in the bowel He [illegible] d no atic and hepatic secretions in five cases of achylia associated with diarrhea, and thinks therefore that extension of the inflammatory process from the stomach into the intestine is probably not the cause of the trouble He mentions Oppler's report of a number of cases of diarrhea dependent upon loss of gastric secretion, and also Biedert's account of his own case, which is a striking illustration of the relation of one affection to the other The diarrhea differs in different cases For instance, in some there are invariably several morning evacuations, and after the middle of the forenoon there is no further trouble, while in others the diarrhea is post-prandial, one or more stools occurring soon after each meal, and in a third set of cases there are many evacuations during the day, taking place irregularly and not following any fixed rule In these cases there is diarrhea every day, but there is yet another class in which looseness of the bowels is periodic, coming on suddenly, lasting a week or two and being succeeded by constipation or in some cases by regular normal daily evacuations for a short period which is followed by another attack of diarrhea The looseness of the bowels is chronic, as illustrated by a number of our cases having had the trouble for years In some instances a great deal of intestinal flatulency is complained of and a large quantity of gas is expelled at stool Pain is not a common symptom in these diarrheas There may be occasionally some colic, but as a rule it is not at all pronounced There is usually no elevation of temperature, it is an afebrile condition, the temperature is sometimes below normal The appetite in some of these cases is voracious, approaching indeed what might at times be dignified by the term bulimia The character of the stools varies In few instances is there an abnormal amount of mucus The discharges are frequent and watery, and contain undigested food, their features being modified by temporary influences In some cases we have observed constipation Einhorn says there is no rule, but that either diarrhea or constipation may be present

In the treatment of this type of intestinal affection a few drugs are in some cases most efficacious The first and most valuable is hydrochloric acid It is our custom to give 20 to 30 drops of the dilute acid after meals, and see that the dose is repeated in an hour This remedy seems a positive necessity for these cases It is the habit of some clinicians to administer it before meals in large doses, say four to eight c c well diluted, in deference to Jaworski's statement that the acid is needed to develop the formation of pepsinogen in the gastric glandules D D Stewart recommends the use of the remedy in this manner The acid is quickly neutralized and combined in these stomachs I have repeatedly failed to detect its presence as early as ten minutes after its administration indeed, after meals it has been necessary to have the patient take good sized doses several times, and then to give him an extra 30 drop dose in my office, five minutes before withdrawing the contents of the stomach in order to find a small amount of the free acid present Another remedy that has proven useful, and which may be given with the hydrochloric acid, is the tincture of the chlorid of iron Usually it is not necessary to give large doses, five drops being quite effective In one case excellent results were obtained by adding two drops to every glass of water that was taken If small doses fail to control the diarrhea, larger should be tried before the drug is abandoned Bismuth preparations have not proved of much use in our cases They may, however, be of service when the intestinal mucous membrane is the seat of considerable irritation and catarrh When an excess of indican is found in the urine, benzosol, benzonaphthol, ichthyol, ichthalbin, salicylic acid, salol, or other intestinal antiseptics may be administered, though small doses of calomel will usually cause a prompt disappearance of the indican

As there exists in these cases what D D Stewart has so well characterized "a suspension of the gastric secretory function," it is advisable to give pepsin in addition to the hydrochloric acid, indeed, this is one of the few conditions that call for its exhibition Sometimes small doses of Fowler's solution, according to the old plan, given immediately before meals, seem efficacious In some cases I have remarked benefit following the use of small doses of a combination of arsenic, gold and the red iodid of mercury Intragastric faradization has been of signal service in several of our cases, the retentive function of the stomach having been manifestly and promptly improved, probably by the effect of the electricity upon the circular fibers at the pylorus

DISCUSSION

Dr J M Anders of Philadelphia—It is with pleasure that I listened to this paper dealing with two interesting and important conditions in association I believe that achylia gastrica occurs most frequently in gastric carcinoma and atrophic catarrh of the stomach and neuroses of the stomach as he has intimated I also meet with this condition in lienteric diarrhea I believe lienteric diarrhea is more frequently dependent upon catarrhal states of the intestines than any other factor To corroborate this view I frequently find more or less mucus in the stools I was somewhat surprised not to hear that this condition of achylia gastrica has not been found associated with tuberculosis, on the other hand, a number of cases of tuberculosis associated with diarrhea—of lienteric character—have been met with I believe that in the majority of cases some great underlying condition co exists, tuberculosis, amyloid degeneration, stomach neuroses, etc, which should not be overlooked in the treatment of this affection I agree with the treatment as described by Dr Jones This is one of the few conditions in which large doses of hydrochloric acid and pepsin are necessary

An interesting thing from a scientific point of view that I have noticed is that in certain conditions where has been found, by the use of Ewald's test meal, an absence of hydrochloric acid and the gastric ferments in the gastric contents, that in spite of the absence of these associated constituents there may be perfect intestinal digestion and absorption I have seen two such cases not long since and also have read an article on this same subject.

Dr Stockton of Buffalo—Dr Jones has given us a good description of achylia gastrica in association with lienteric diarrhea In my judgment we should separate these cases into two classes—first, those which are accompanied by intestinal disturbances, and second, those which are not so accompanied No doubt the advent of diarrhea is an unfortunate factor in patients suffering from achylia gastrica, yet when diarrhea does not exist there is a retention of food This peculiar symptom of achylia gastrica—diarrhea—does not depend upon one factor alone It is largely a nervous expression I mean to say that undoubtedly some cases are associated with atrophy of the gastric mucosa or catarrh, these cases should be recognized. On the other hand, we have cases not associated with either catarrh or atrophy of the gastric mucous membrane These cases have periodical attacks which lighten up without any apparent cause I have one patient who has this trouble only when pregnant, I have followed her through three pregnancies, the woman is today as well as she was ten years ago Another patient of mine always has this diarrhea when at home, as soon as she goes away from her home she is relieved I believe that we have certain cases of achylia gastrica dependent upon nervous conditions alone, we also have them as the result of atrophy of the gastric mucosa When this is the case they should not be considered as typical achylia gastrica

Dr Elliott P Joslin of Boston—This paper has been one of interest to me, coming as it does from one so intimately connected with the study of this disease Dr Jones has placed a special emphasis on the symptom of diarrhea in achylia gastrica It is interesting that its opposite—constipation—is perhaps quite as frequent. This is to be expected when dealing with an affection of largely a functional origin Rosenheim pointed out in his Moscow address, it is the variability of the symptoms at different times in the same individual that stamps the nervous dyspeptic One of these cases of achylia gastrica with constipation I recently saw with Dr James J Putnam It deserves mention because the patient presented a triad of symptoms which I believe will be found quite commonly in the future The patient was a tall, spare man of 71, a captain of a coasting vessel He was never immoderate in the use of food or drink Four years ago, following what was supposed to be an attack of the grippe, he developed melancholia, and on account of this sought Dr Putnam's advice In the course of the examination a complete enteroptosis was discovered The lower border of the stomach, when distended with air, was at the pubes, while the upper, in the upright position of the patient, was at the umbilicus The liver and kidneys were correspondingly depressed But Stiller's sign, "movable tenth rib," was absent. Repeated examinations showed complete absence of free and combined HCl and peptones, thus giving *us in addition to the melancholia an enteroptosis achylia gastrica* Are not the parts of this triad melancholia, enteroptosis and achylia gastrica, simply different expressions of a disturbed mechanism?

In the treatment of this affection I can hardly agree to what has been said as to the use of HCl My own notion was that if a nurse gave a patient, by mistake, fifteen drops of dilute HCl before a test breakfast, the test for the free HCl in the stomach contents removed one hour later would be of no avail I am indebted to Prof Ewald for pointing out to me my error Some experiments of Prof Chittenden, recorded in his book, "Digestive Proteolysis," give the explanation To put the matter in a popular way the albumin in two or three eggs dissolved in a little water, will combine with a pint of 2 per cent. HCl, and the solution when then tested with Günzburg's reagent will fail to show even a trace of free HCl The few drops of acid which we give a patient are simply a "drop in the bucket," and are combined with albumin and still more with peptones the moment they reach the stomach It is practically impossible to give the needed amount of HCl in these cases. Pepsine would be an advantage in achylia gastrica if we could give a sufficient amount of acid to insure its action, but we have seen that it is impossible, and consequently pepsine can be of no use save for its mental effect on the patient. If one feels constrained to give a ferment, then give pineapple juice, as that will digest albumin in a neutral, acid or alkalin medium

What then, shall we do in these cases? The stomach does not digest food, therefore the food must be gotten out of the stomach as soon as possible Fortunately, nature does this for us as a rule If she does not there is nux vomica to fall back upon What next? The food must be given in a state to enter the intestines without further change Finally, the recent operation of gastrostomy shows that patients can get along without a stomach, but we know they can not get along without food An abundance of easily assimilable and nutritious food is the key to the successful treatment of achylia gastrica

Dr Bridges of Nebraska—In regard to the point made by Dr Stockton in cases of associated diarrhea in achylia gastrica, one must remember that this condition may be, and frequently is, an independent affection of the intestines Most authorities give constipation instead of diarrhea as existing in this condition as a rule Achylia gastrica in most cases leads to a condition of dilatation or a condition of stagnation, we also have in many cases of achylia gastrica vomiting associated with constipation A condition of catarrh of the duodenum or small intestinal glands giving rise to diarrhea is quite plausible The frequent taking of certain food gives rise to irritation of the small intestine, with accompanying diarrhea If some cases depend upon a neurotic condition there is always a possibility of a chance for improvement and possibility even for cure I am especially interested in this subject, especially after reading the writings of Einhorn where he states that the repeated examination of the stomach contents show an absence of the stomach secretions, and even of the rennet ferment To me there is no doubt but that there is an atrophy of the gastric follicles

In regard to the treatment, what I would do in these cases would be to employ gastric faradization before employing medical treatment. In one case I carried out intra gastric faradization for a period of two months with great improvement in a young girl This treatment should be carried out two or three times weekly

Dr Allen A Jones, in closing—Dr Anders has mentioned the dependence of achylia gastrica upon tuberculosis It has not been our experience to find it associated with pulmonary tuberculosis, but rather in this condition have we found catarrhal gastritis with diminished secretion of gastric juice

Dr Joslin has pointed out that the great desideratum in these cases is that the stomach should empty itself very soon after eating, and he also doubts the efficacy of hydrochloric acid in the treatment of the affection While I agree with him as to the truth of the theoretic reasoning, clinical experience has taught me that these cases feel badly and have diarrhea whenever the stomach empties itself with great haste and whenever they cease taking hydrochloric acid

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HEMOGLOBINURIA AND HEMOGLOBINEMIA REPORT OF CASES, TWO DEATHS AND FOUR RECOVERIES

Presented to the Section on Practice of Medicine at the Forty ninth Annual meeting of the American Medical Association, held at Denver, Colo, June 7-10, 1898

BY GEORGE J HIRTH, M D
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MILWAUKEE WIS

Hemoglobinuria, which may be a disease *per se*, is also present as a symptom in many other conditions, viz in various chemical intoxications, a long list of infective processes and also extensive burns, more especially does it occur, as a disease, in paroxysmal hemoglobinuria, syphilis and malaria being the cause A given predisposition, combined with a sufficient cause, as sudden exposure to cold, strained physical condition and the like, will produce the characteristic lesion which is to be found in the blood, and which consists of the disassociation of the oxy or carbon-dioxy hemoglobin, the free hemoglobin being taken up by the blood plasma—hemoglobinemia (Virchow) The free hemoglobin produced by the increased hemolysis is eliminated as such, in part, by the kidney (hemoglobinuria), and in part as gall (bile pigment of bilirubin and biliverdin) The stroma of the blood corpuscles having undergone this change are to be found generally in the blood or urine a short time thereafter as *blood shades*

In consequence of the above, there will be an elevation of temperature, enlarged spleen and liver, more or less icterus, and urine containing a high percentage of hemoglobin with possibly gall pigment and few or no *blood shades*

The cases which I am to report may be known as group 1, patients A, B, C and D, and group 2, patients E, F and G, and before describing each case a few introductory remarks regarding group 1, as regards pre-existing conditions, will be seen to be pertinent

Group 1 four men, A, B, C and D, painters, engaged in shellacing large beer vats for several seasons past with seeming impunity, three of whom, while working under about the same conditions, on or about January 26, and working until about seven o'clock, after which they went in seeming good condition to their respective homes, were taken ill A, late that night, and B, the following day, both making their *exitus* within twenty four hours after they had concluded their work on the previous day Patient C recovered after a serious illness of several weeks, having gone through similar prodromal symptoms to those who died A history and detailed account of symptoms of surviving patient C are as follows

Patient C, age 26 y [illegible] t 18[illegible]nds, family history, engaged in shellacing for several seasons, suffered in common with deceased patients A and B, at various times during several weeks prior to his illness, with nausea, headache, muscular weakness, prostration, ringing of the ears, mental impressions of exhilaration, and temporary attacks of aberration of the mind, with mental depression and sharp, shooting pains, mostly in the back—*sordes labialis* also quite extensive On Friday evening, Jan 28, 1898 after having worked till seven o'clock this same day, this patient consulted me for the above described symptoms, and on the following morning I was called to my office to care for patient, whom I found greatly prostrated, with pulse slightly accelerated, temperature 99 6, respiration decreased, pupils partly dilated, slightly cyanosed condition of the lips and finger tips, cheeks slightly flushed, and physical and psychical conditions of patient much involved When patient attempted to leave he staggered and fell, there being complete inability to walk other than in a tottering condition Patient was taken to his home and prescribed for as follows Pills containing 3 m of digitalis, 3 m of strophantus and 1/100 nitro-glycerin, one every three hours, and two tablespoonfuls of lime water every one and one-half hours, placed in a warm bed and surrounded with warm water bottles, and given a cathartic Several calls were made during the day, and at ten o'clock in the evening patient assumed a comatose condition, countenance became from white to pale livid, respiration deep and labored, 9 per minute, and pulse between 40 and 45, extremities, nose and ears, cold and clammy On the fourth day I found the liver and spleen much enlarged, the latter being from three to four times its normal size Cold water was used freely on face and chest, strong, hot coffee was given after thirty minutes, when patient was brought to a semi-conscious condition He was given a large enema of three quarts of cold water, and a great quantity of putrid fecal matter was passed, and the enema was repeated with same result Patient remained unconscious and had no account of time for the first four days of his illness I catheterized and drew off 1½ pints of dark to reddish-brown urine, which, upon examination the following day, contained hemoglobin Guiaca turpentine test, giving an indigo-blue ring and an absence of blood corpuscles by microscopic examination I found bile pigment on the third day, and it disappeared on the ninth, a small amount of albumin and a few *blood shades*, and no sugar

On the second day of the patient's illness, symptoms, circulation and respiration were improved, but the central nervous system became more involved, the skin and conjunctiva became tinged with yellow, complete loss of vision, pupils completely dilated and did not react to the most intense light Patient was kept in a dark room, eyes washed with a solution of Seyler's tablets and dressed three times daily At the end of the fourteenth day patient began to see the larger objects in the room, such as sofa, bureau, etc, but could not count fingers at normal distance

On the eighteenth day an ophthalmoscopic examination was made by Dr Bartlett, professor of ophthalmology of Milwaukee Medical College, which revealed the fact that the retina was immensely congested, there being about eight to ten times the normal amount of capillaries, pupils did not respond to light, and there was a general congested condition of the eye and its appendages, with a few unaccounted for spots in the retina At present the vision has improved to a considerable extent, though subnormal

On the second day patient lost control of his extremities and back, having interrupted ringing of the ears, dizziness and a train of nervous symptoms which I shall omit, and was first able to get out of bed with assistance on the twenty-first day after onset of disease

Pustular macules significant of chronic pyemia began to appear on the seventh day in great numbers all over the body, but particularly about the face, and from that time on I opened from fifteen to thirty daily, being in full bloom of pustulation, they continued for forty days, at the end of which time a picture was taken and an actual count made, giving 131 macular lesions in one or the other of their characteristic stages, on the face alone From this time on they began to abate considerably, with return to the normal condition of the blood

On the twenty-first day of the disease an examination of the blood was made by Dr Evans, with the following results Poikilocytosis, failure to form in roulettes Percentage of hemoglobin, 80 Number of red cells per c m, 3,072,000 Percentage of normal, 61 44 Corpuscle index, 130 Number of white cells per c m, 8400 Percentage of normal, 84

Reported examination of the blood showed an increase to normal constituents until the eleventh week, at which time it was practically normal

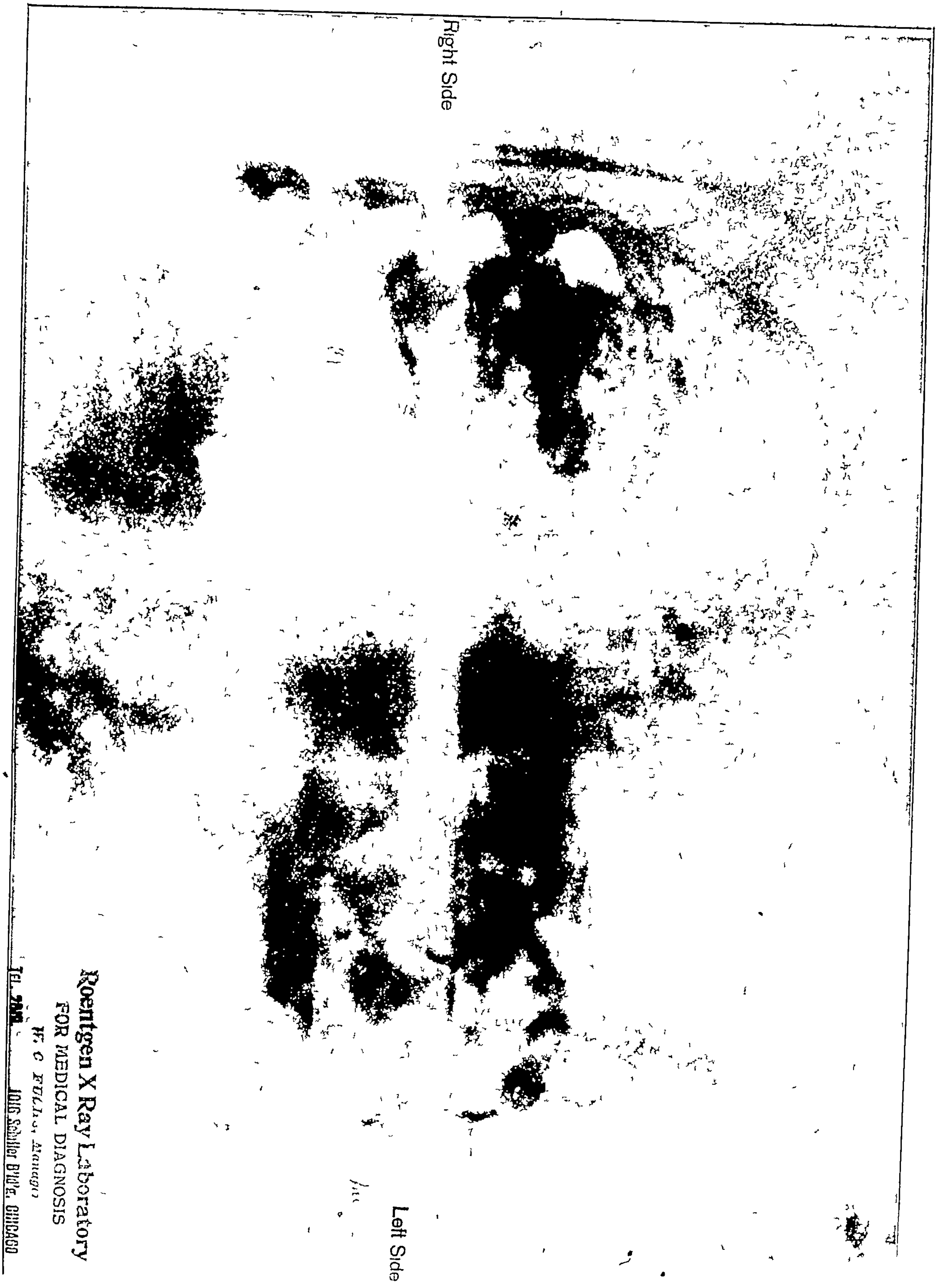
The pathologic findings in the urine disappeared in the following order, viz hemoglobin was absent on the third day, bile pigment was found last on the ninth day, and the last trace of albumin disappeared on the eleventh day, spleen began to decrease in size on the twelfth day, on the sixth or seventh day the *sordes labialis* began to disappear, and the appearance of a small open sore became manifest on the left side of lower lip, and took on a very rapid growth, blood plasma constantly exuded at this point of lesion, and within fourteen days it appeared to be a typical rapidly-developing epithelioma I considered it a dangerous factor on account of its very rapid development, and that it was due, doubtless, to the lessened cell-resistance, conjoined with increased cell irritability Owing to the impoverished condition of the patient's blood I deemed it advisable to operate at once without an anesthetic, which was done by Dr Earles and myself, at Trinity Hospital, on March 12, being about forty days after the first appearance of the growth Operation a success Microscopic findings proved it to be a true epithelioma The report of Dr Evans of Columbus Medical Laboratory, on same, is as follows

"The specimen is a very pretty illustration of progressing epithelioma You will never find a better illustration of invasion of underlying tissue than is here shown There are no pearls or other phenomena indicating any disposition to degeneration There is considerable ordinary inflammation"

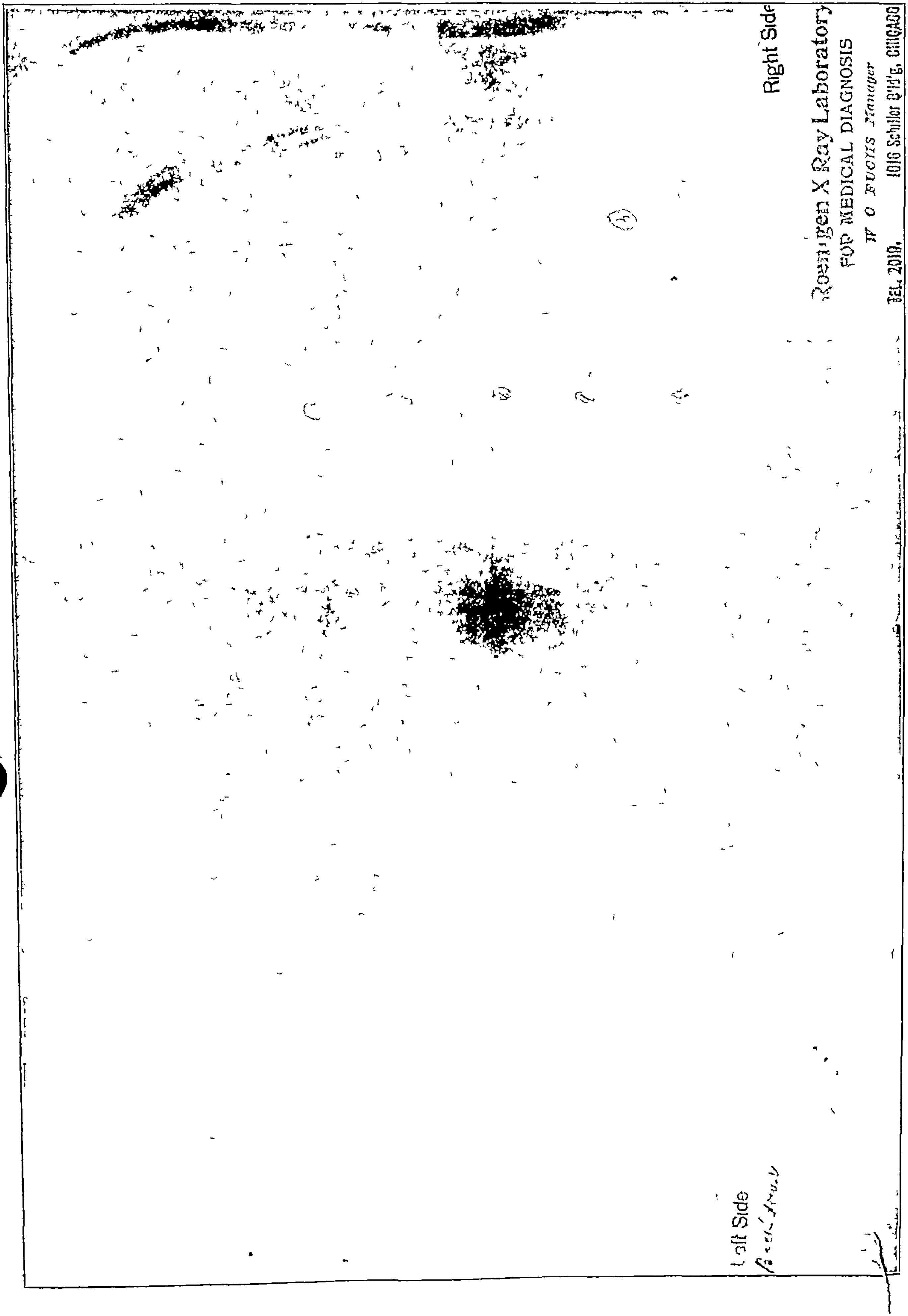
The general tonic treatment of quinin bi-sulphate, alcohol, arsenic, iron, manganese, and faradization and galvanism, from 1 to 1½ milliamperes, to the spine and muscles was continued, and patient from this time on made a very rapid recovery

Patients A, B and C, were quite temperate, but patient D was addicted to the free use of stronger spirits, and, while having suffered some of the symptoms of the two deceased, and recovered, it may justly be said that he took his daily quota of stronger spir-

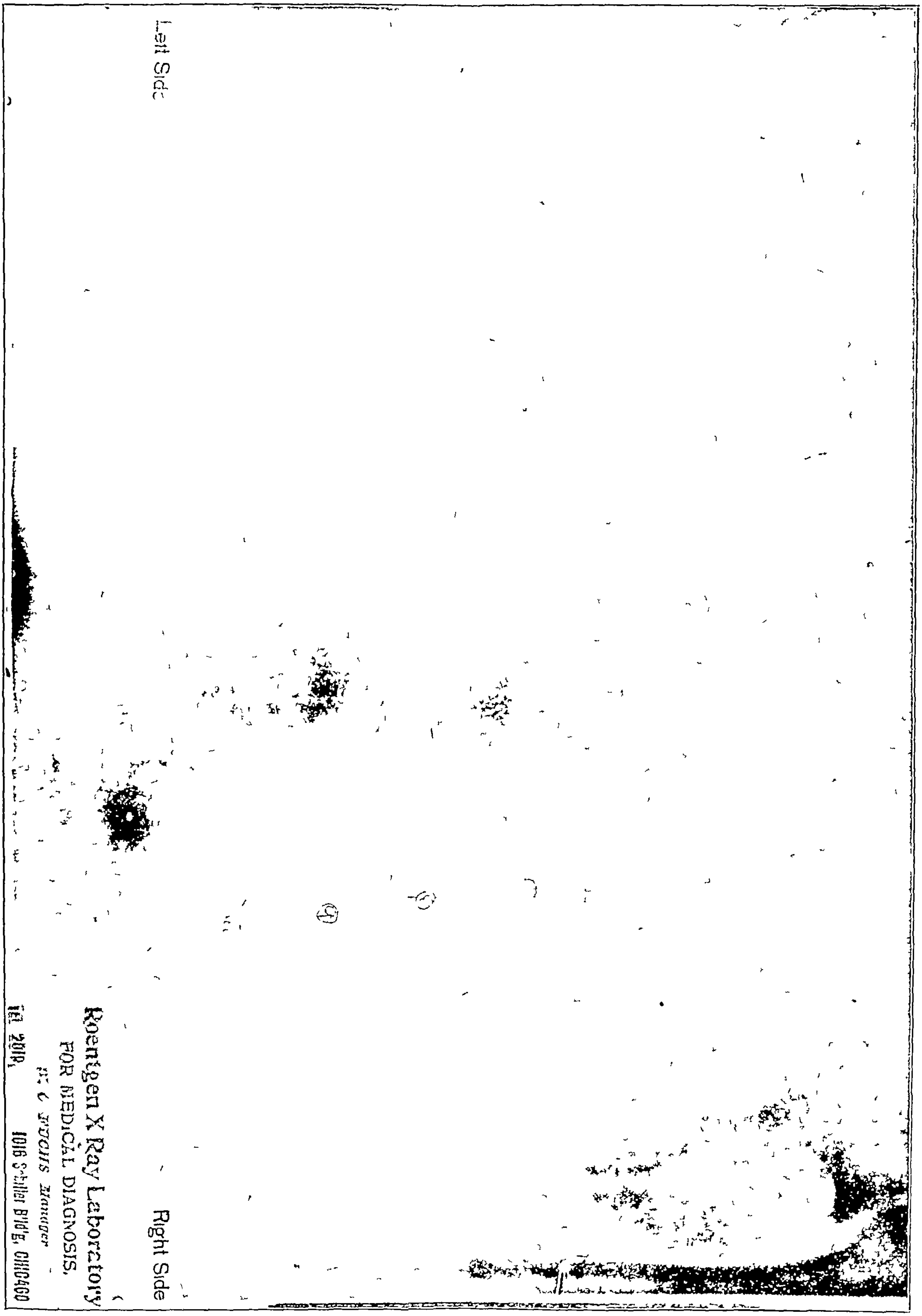
RADIOGRAPH No 5—CASE OF DR J B MURPHY



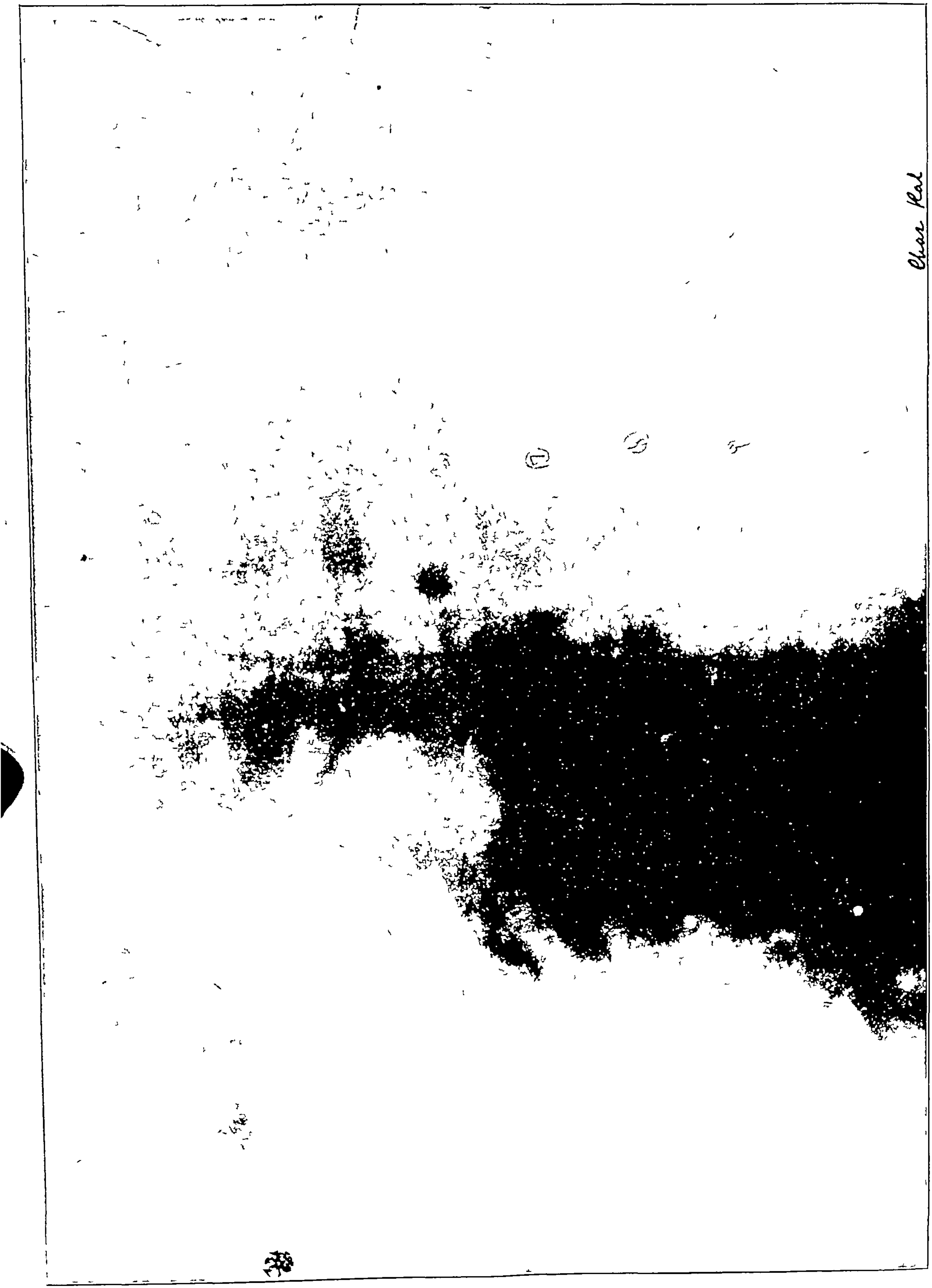
Radiograph No 6—Case of Dr J B Murphy


Right Side
Roentgen X Ray Laboratory
FOR MEDICAL DIAGNOSIS
W C FUCHS Manager
TEL 2010. 1016 Schiller B'ld'g, CHICAGO
Left Side

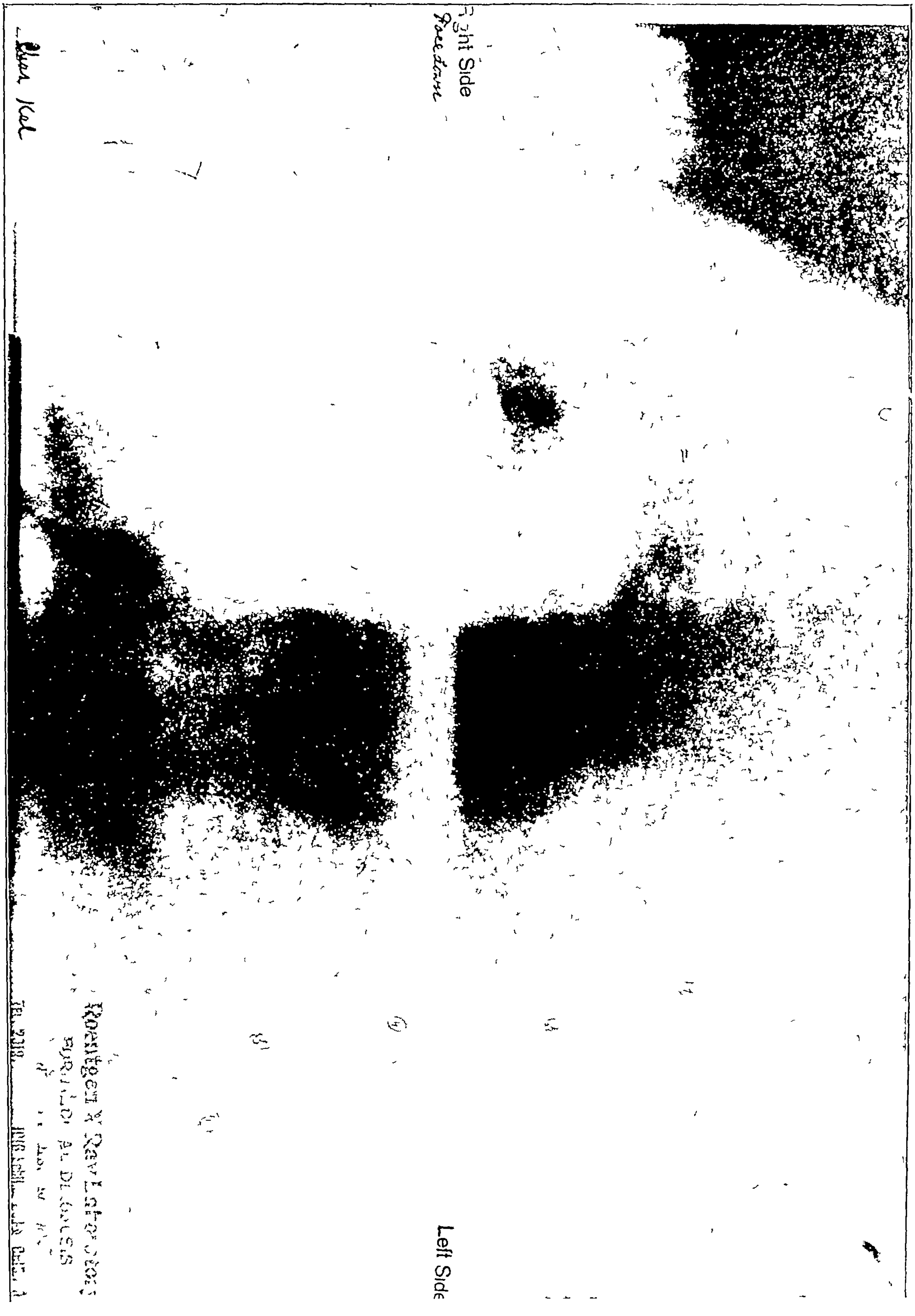
RADIOGRAPH No 7—CASE OF DR J B MURPHY



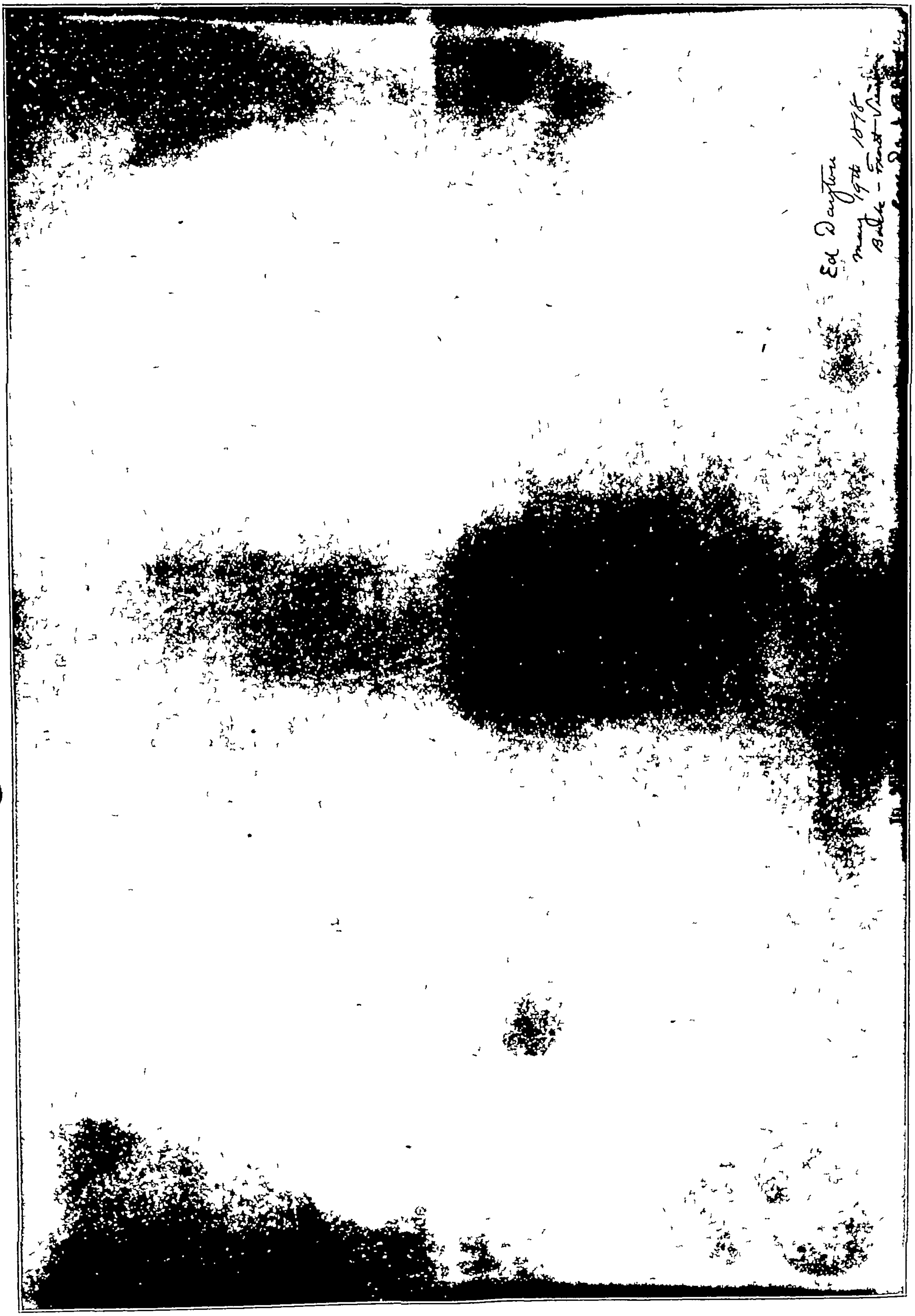
RADIOGRAPH No 8—CASE OF DR J B MURPHY



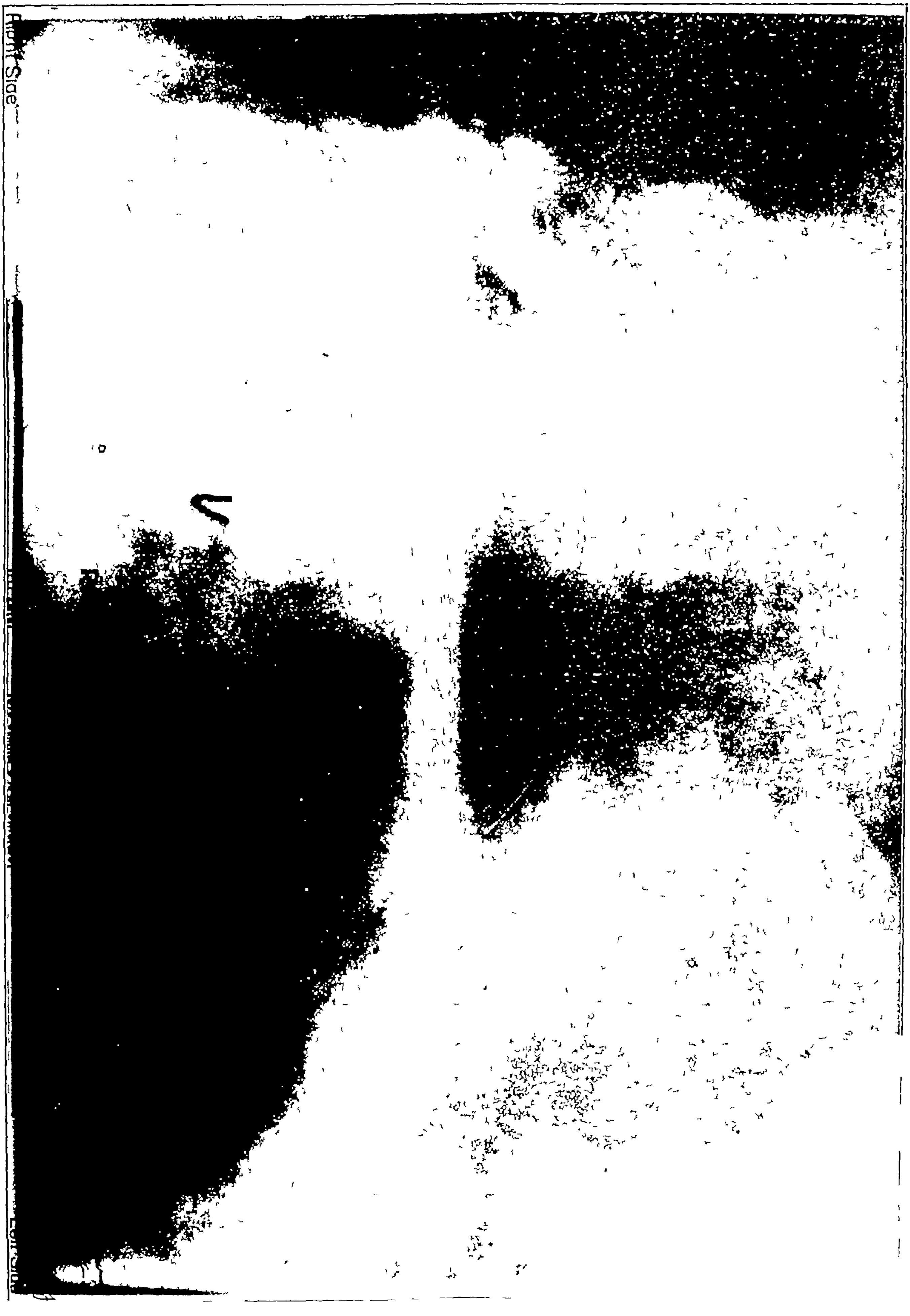
Radiograph No 9—Case of Dr J B Murphy



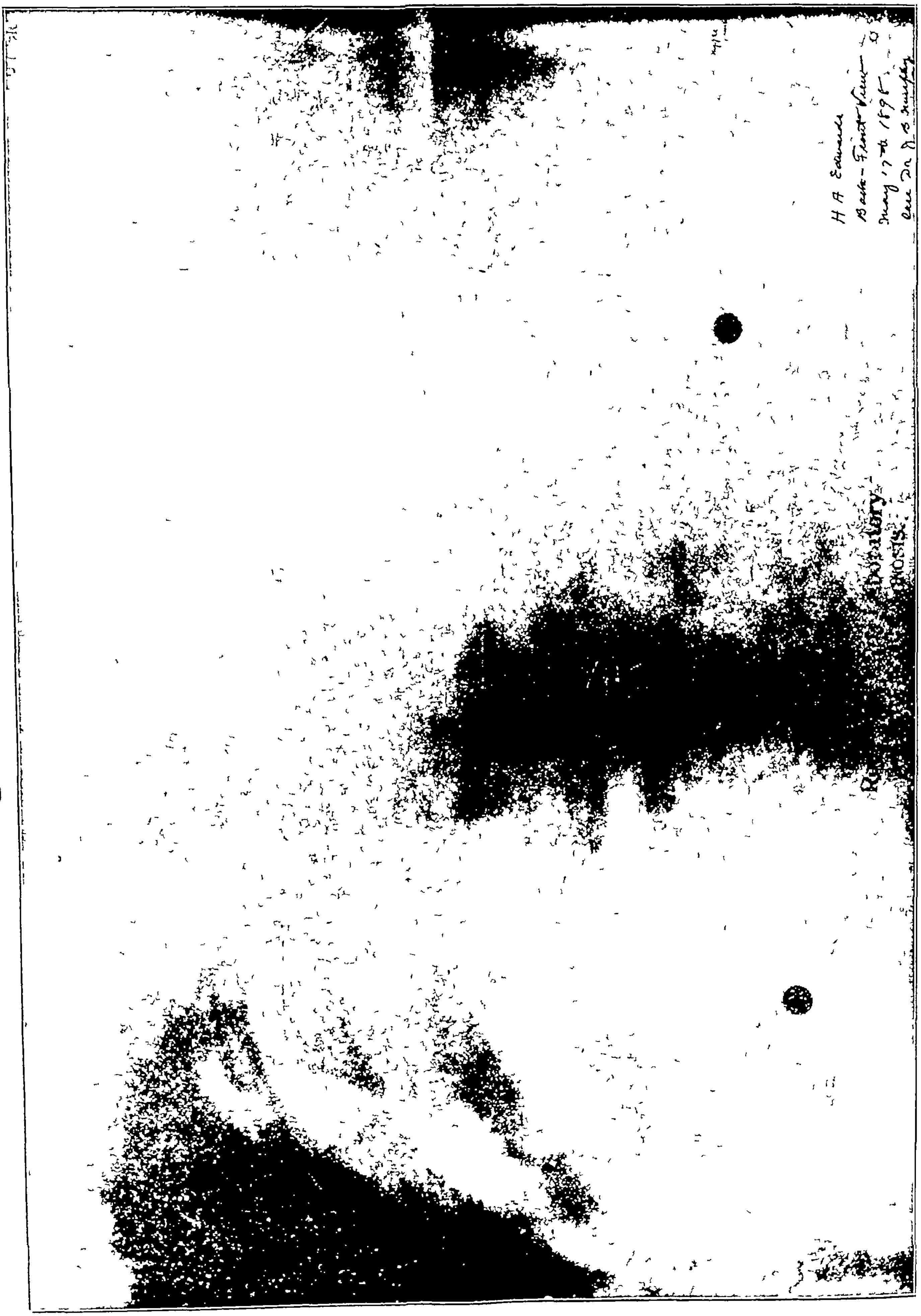
RADIOGRAPH No 10—CASE OF DR J B MURPHY



Radiograph No 11—Case of Dr J B Murphy



RADIOGRAPH No 12—CASE OF DR J B MURPHY



its, which fact, we may justly assume, played the partial part of an antitoxin in preserving his health

The deceased patients, A and B, had identical prodromal symptoms with the one I have just described, other than that the comatosed and unconscious condition was continued and interrupted by convulsions and finally death The report on record at the Milwaukee City Coroner's office, as regards the pathologic findings of the two who died, shows that all organs were normal, with the exception of slight pleuritic adhesions, and heart slightly hypertrophied with thickened valves in one, in the other case all organs were normal, with the exception of the kidneys, which were possibly congested In both cases the heart ceased to beat in systole, and blood was fluid throughout the body, and was of a dark color

That the two who died and the one in the case just cited suffered from one and the same disease, toxic hemoglobinuria, can not be questioned, thus, the only question of interest which remains, as regards cause, is whence the source of intoxication? The three factors which might have produced the condition were cold, carbon monoxide, or the impurities present in the wood alcohol which was used for cutting the shellac A free discussion and investigation of these three cases is to be found in transactions of Wisconsin State Medical Society, 1898, and for reasons given there it is plainly evident that death was caused by the impurities present in the wood alcohol which was used for cutting the shellac Can there be any doubt that these three patients had gone through recurrent attacks of toxic hemoglobinuria due to the inhalation of the wood alcohol vapors containing, "at times, aldehyde and acetone, the latter often reaching as high as 18 per cent by weight, but aside from this there are cyanide compounds, notably methyl and ethyl cyanide which are highly toxic"[1] The inhalation of an extraordinary amount of this toxic alcohol produced the climacterium

Group 2 consists of patients E, F and G Patient E is a good example of paroxysmal winter hemaglobinuria, and, since I have treated patients through a number of attacks a description of an attack may be of interest

Patient E was a strong man, 30 years of age, good family history, no specific or malarial taint, carpenter, and has been treated by me for eight or nine different attacks during the past five years Those attacks are characterized by a decided chill, which comes on from five to twelve hours after an exposure to cold, after having been confined in the house for a few days Chill is of a severe character lasting from one to one and one-half hours, and is accompanied by a temperature of 102 to 103, pain in back radiating to abdominal, inguinal and vesical regions, frequent micturition of dark brown urine, extreme frontal head ache and general prostration The temperature lasts from ten to twelve hours, beginning before the chill, and only abates after the chill and pains have subsided and body is bathed in profuse perspiration

Urine contains hemoglobin and, in severe attacks, a few blood shades, but I have never found hemoglobin after twelve hours from the onset of the chill He is able to attend to regular duties within one or two days after an attack, and the paroxysms are best treated when left entirely alone, aside from placing patient in a warm bed Free use of warm-water bottles, and a liberal use of alcohol have been found to cut short the chill

Upon one occasion before I had made a diagnosis, I resorted to the use of chloroform with the view of cutting short the chill, and it came very near costing the patient his life, the chill became the most severe one I ever experienced, lasting over three hours and terminating in convulsions and final recovery It may be of interest to note that during the past year patient has become quite addicted to the use of alcohol, and during the past winter has been free from attacks, which, during the previous ten or twelve years, has never occurred

Patient F (female) is of little interest other than that the hemoglobin was found in the urine until eight days after a severe burn involving the anterior and lateral aspects of left leg above and below the knee

Hemoglobinemia —In the last case the patient was a girl 7 years of age, good family history, has just recovered from a severe attack of acute meningitis, and on the seventh and ninth days temperature ranged from 103 to 104½ Blood was extracted according to Küssner's Method, by allowing several leeches to fill on the desired blood, and then the blood was allowed to stand in ice chest for twenty-four hours, the serum was of a ruby-red color and was centrifuged with negative results for corpuscles, but it gave the two absorption bands of hemoglobin, and disappeared upon the addition of ammonium sulphate, by a similar process, other than that the serum was filtered from the blood immediately after removal, the blood upon examination on the ninth day gave same results The urine was examined on the sixth, eighth and ninth days, with negative results, thus proving that hemoglobinemia may exist without producing hemoglobinuria

It is authentically stated that hemoglobinemia and hemoglobinuria are frequent complications in severe cases of typhoid, diphtheria and scarlet fever, and I am of the opinion that its presence should be noted as a grave complication and such medicines as favor its production should certainly be withheld, or used with caution Potassium chlorate, antipyrin and all coal tar derivative febrifuges, etc

Cause of chronic pyema and pathologic condition of patient C before referred to As to the cause of the many various symptoms, it can hardly be questioned but that the conditions were due to the increased disintegration of the red corpuscles of the blood, through the agency of the toxic wood alcohol substances before referred to, whereby an autointoxication of the tissues was produced, dependent upon the hemoglobinemia Howell, "American Text-book of Physiology," says, on page 358 "Intravascular clotting more or less general in occurrence may be produced by injecting into the circulation such substances as leucocytes obtained by maceration of lymph glands, extracts of fibrin ferment, solutions of neucleo albumins of different kinds, etc" The Dorpater School teaches us that the hemoglobin taken up by the blood plasma in cases of hemoglobinemia of any consequence produces toxic action on the white corpuscles, leading to their disintegration and consequent formation of fibrin ferment May we not also add a third class of corpuscles, the blood platelets, which are even more unstable

From the foregoing it follows tha a ch [illegible] auto-ferment intoxication [illegible] nd s [illegible] ting of the blood is [illegible] of the fibrin ferment on fibrinogen, and (fibrinoplastin) there was unquestionably formed fluctulent fibrin coagulæ producing multiple emboli and hemorrhage of the small capillaries, thus producing the chronic pyema, temporary loss of vision, as also were the grave nervous symptoms produced in the same way

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[1] Perry L Hobbs Ph D

Note on treatment of hemoglobinuria and hemoglobinemia of severe character —In these cases, internal blood combustion being too rapid, a treatment with heavy oxidizing agents, such as ozone, peroxide of hydrogen and oxygen, would increase metabolism and disintegration of red blood cells, thereby increasing the production of CO_2 and other effete poisonous products, it is therefore necessary to decrease this metabolism, which can best be done through the agency of reducing agents, the ones most available being calcium hydrate and nitro glycerin This also holds good in cases of gas poisoning (hemoglobinuria) which is mainly a CO poisoning The giving of pure oxygen, ozone, etc, only does harm by adding more fuel to the flame, while the system has alread been poisoned by the effete products of increased metabolism, likewise is the same true in our severe pneumonias, as in either of the two latter conditions

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SOME CONSIDERATIONS OF UREMIA AND ITS TREATMENT

Presented to the Section on the Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association held at Denver, Colo, June 7 10, 1898

BY E W MITCHELL, M D

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS MIAMI MEDICAL COLLEGE

CINCINNATI OHIO

The numerous and varied symptoms which have been classed under the term uremia have always been an interesting theme for study and speculation Of the many special theories which have, from time to time, been proposed to account for its phenomena, none have withstood the tests of investigation and criticism The theory so long ago advanced that the *materies morbi* is urea was quickly and generally accepted because of the ready proof that in these cases the urea was greatly reduced in the urine and largely increased in the blood and tissues So firmly did this opinion become fixed in the professional mind that it yet largely prevails, although it has been repeatedly shown that, administered in much larger amounts than are ever found in uremic cases, it is harmless The fact that experimental and clinical observation teach us that the decrease of urea in the urine gives us a fairly accurate indication as to the imminence of uremic attacks has helped to keep it associated in our minds as the important causal factor in spite of the evidence to the contrary

The failure to inculpate any one of the chemic substances of the urine, or any one of the pathologic conditions as the essential causal factor, has driven us to the conclusion that many or all of them play some part "The uremic poison is complex in character, and may vary, not only in the proportion of component elements, but also in the elements themselves," states about the conclusion to which we have come Repeatedly it has been demonstrated that normal urine is toxic and that its toxicity is diminished in proportion as the kidney becomes impervious The inference is the retention within the blood and tissues of these toxic materials which the urine has failed to carry away

As to what these elements are and their properties, we have probably the most satisfactory answer in the investigations of Bouchard, as set forth in his most admirable monograph on "Auto-Intoxication" In the normal urine he has found seven toxic substances Among these are two which produce convulsions one inorganic, which he has proven to be potash, another organic, whose exact chemic nature is not established, one which produces coma, a fourth produces ptyalism, a fifth is myotic, a sixth lowers temperature, one (urea) is diuretic So accurate is the work of Bouchard and so closely do the physiologic actions of these substances correspond to the several prominent symptoms of uremia, that we are justified in assuming that we have in this state a toxemia, or to use the expression of Bouchard, an intoxication, furthermore, that the form which the intoxication will assume will depend upon the substance preponderating in the retained products If it should be the convulsants, one or both, convulsions ensue, if the narcotic, we have coma Mydriasis is often present A lowered temperature is common Ptyalism is sometimes the most prominent symptom I have seen one case in which it was the only symptom which excited suspicion of nephritis

Mrs F H came to my office complaining of excessive salivation She had been under treatment by a physician for several weeks without any alleviation She was three months pregnant, stated that the urine was free in quantity, although subsequent measurements showed it reduced, that she had been in good health, except for an illness a year previous, in which the urine had been very scant Urinalysis showed a specific gravity of 1010, a small quantity of albumin and a variety of casts Prompt treatment of the nephritis was followed by temporary improvement A few weeks later an abortion occurred, anuria followed, with development of coma and death Postmortem examination showed advanced diffuse nephritis

Bouchard has shown that the narcotic substance in proper proportion has the power of neutralizing the convulsant In this we may have an explanation of that anomalous fact that so often we have the most advanced impairment of the functions of the kidneys without the development of either convulsions or coma Anuria not infrequently exists for many days without uremia Reduced metabolism has never been a fully satisfactory explanation of this fact

The recent importance attached to fermentative processes in the intestinal canal with the production and absorption of ptomaines has drawn attention to this as one source of intoxication Bouchard has clearly shown how greatly the toxicity of the urine is increased by intestinal decomposition It has also been shown that the physiologic secretions, such as the bile and saliva, contain toxic substances and their reabsorption may contribute to the poison We have therefore four sources for the toxic materials 1, the products of tissue disintegration, 2, food substances, especially the potash salts, 3, absorbable products of intestinal fermentation, 4, reabsorbed secretions, such as the bile and saliva

I shall merely refer to another subject in this connection, but one not sufficiently worked out to be dwelt upon in this, which aims to be a brief and practical paper, namely The functions of the liver in relation to the destruction of these poisonous products

In view of our present knowledge of this work of the liver it can hardly be questioned that its failure to properly dispose of the poisonous materials brought to it may be an important factor Another point to which I shall merely allude, is that the quantity of albumin present is not a reliable measure of the danger of uremic accidents

For the practical physician the chief value of chemic and physiologic revelations is the indications they give foi treatment

In the treatment of what may be called chronic uremic symptoms, such as headache, dyspnea, nausea, etc, we have involved the treatment of the chronic nephritis The points I wish to insist upon in this connection are that metabolism shall be reduced by rest, intestinal fermentation guarded against by proper diet, catharsis, and if necessary the occasional use of non-absorbable intestinal antiseptics

The bacteriologists have shown us that meat and meat products, such as soups and beef tea, are especially good media for bacterial growths, and that they produce the most virulent ptomaines In meat also we have a source of potash salts, hence the importance of excluding it from the diet of all patients threatened with uremia In serious cases, a strict milk diet, in the less serious a milk diet with carbohydrate food is the most satisfactory

Elimination by the skin is to be maintained, not by the use of drugs, but by baths, hot air, vapor or packs, selected according to the convenience and tolerance of the patient It will frequently be found that one form is much better borne than another Minute attention to all the habits of life, clothing, diet, the maintenance of elimination, will often defer for a long time the onset of uremic accidents The prophylactic value of one drug is not sufficiently appreciated, namely, veratrum viride

Several years ago an aged patient had several attacks of uremic coma, the pulse was hard and bounding, not only during the attacks, but also between them Here was evidently an indication for lowering of the blood pressure, for which purpose we have no surer or safer drug than veratrum In this case its administration in amounts sufficient to materially lower the blood pressure, held the attacks under control until treatment of the nephritis had restored him to health I have since, a number of times, where uremia was threatened or feared with high blood tension, seen its good effects

Notwithstanding most of our text-books warn against it, the use of drastic diuretics is too indiscriminate In acute inflammations the great principle of rest is certainly as applicable for this organ as of others It should not be stimulated to greater work, but should be as far as possible relieved by calling upon the complementary organs of elimination

In the treatment of uremic convulsions and uremic coma there prevails a great diversity of practice and of opinion During the convulsions, the first indication is to save life from the convulsion itself The convulsion may be controlled by chloroform or by morphin, hypodermically It is, however, bad practice to continue the administration of chloroform hour after hour, as is sometimes done, because of its destructive effects upon the blood corpuscles and because of its interference with oxidation The difference in experience and of opinion with reference to the use of morphin is due to lack of discrimination in cases For the immediate control of an acute attack it is often most valuable, and usually safe Its action in locking up secretions and diminishing elimination contraindicates its use in chronic conditions or its repeated use in acute conditions The great success of veratrum viride in puerperal convulsions has suggested that it may also be useful in the eclampsia of Bright's disease I have twice used it with success in these cases In a third case its use controlled temporarily the convulsion, but was followed by great reduction in the quantity of urine and finally coma and death This, however, was a hopeless case, all other remedies had failed, the chief indication, the high tension of the pulse, was absent. Veratrum acts by lowering the arterial tension, by depressing the motor centers of the cord, and by promoting sweating

Pilocarpin I mention only to condemn Its sudorific effects are very often more than offset by the profuse salivary and bronchial secretions, and the patient is drowned in his own fluids Having twice seen this result, I have abandoned it

Bleeding, which for so long was abandoned, is again coming into favor It will probably maintain a permanent place in the treatment of certain cases. At the present time it is especially used when combined with transfusion of normal salt solution This leads us to the consideration of this newer means of treatment Sufficient experience has now accumulated to prove its great value in the relief of uremic accidents. When the case is urgent, the saline solution should be given by transfusion into the vein in order to get its immediate effects When the case admits of an hour or two delay, the solution should be given subcutaneously, since the former method is not without danger, and the latter is equally efficacious If the blood pressure is low, the preliminary bleeding may be omitted The reported cases, which are now numerous, show almost invariably prompt improvement Ultimate recovery, however, depends upon the degree of disease in the kidneys The immediate effect of the infusion is to dilute the poisonous matters in the blood and thus diminish their effects on the nerve centers Elimination is enormously increased by the prompt production of profuse diuresis and diaphoresis We have herein a means of tiding many patients over the emergency, giving them the opportunity to recover, provided the anatomic changes in the kidneys are not already too far advanced

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SOCIETY PROCEEDINGS

The Medical Society of the State of New Jersey.

One Hundred and Thirty second Anniversary at Asbury Park, June 28, 1898

(*Continued from page 185*)

SECOND DAY

A paper was read by Dr WILLIAM PIERSON, third vice president, on

THE UMBILICAL CORD

Up to the present day no settled plan of treatment of the cord has been agreed upon Teachers differ widely, yet this is a subject demanding better consideration He described the treatment it received in the inferior animals, torn by the struggles of the offspring or bitten off by the mother The Indians do not sever it until the placenta is expelled The Japanese tie close to the body and preserve the cord with the family archives until the child arrives at maturity, when he constantly carries it about with him and it is finally buried with him Non ligation will do when the cord is crushed, torn, chewed, etc., so that bleeding is not likely to [illegible] is safer, as cases have occurred where h[illegible] on with fatal results, even when care had [illegible] is tied as soon as the child cries, this too precipitate as we may thus rob the child of needed blood As no harm is seen from late tying, let the child cry and breathe well for a few minutes, or wait till pulsation ceases Narrow linen bobbin, sterilized, is best for the ligature Silk is apt to cut the vessels and cause hemorrhage, catgut is unsuitable as it rots rapidly The usual length from the body is about two inches The long stump is urged, to avoid tying the intestines and to leave room for a second tie should hemorrhage occur The short stump leaves less dead tissue, less fetor, it shrinks and sinks into the depression becoming a scab or crust less liable to be pulled or torn, hence it is better The dressing is to aid the separation, cause complete cicatrization, lessen risk of sepsis We must encourage the drying, hence not use grease or wet bandages Absorbent cotton is now in general use, it prevents contact with the skin and does not prevent rapid drying Free exposure to the air is well and the application of absorbent antiseptic powder prevents excoriations of the skin, as boric acid powder, or rub the end with a moistened bichlorid tablet, dress daily He has followed, for the last fifteen years, the plan of stripping the stump so as to get rid of all blood and gelatinous matter, leaving it nearly dry, then it may be left without any dressing and falls off like ripe fruit. Under the moist plan the stump decomposes and sloughs off, this may extend to the umbilicus and an open ulcer follow, with great danger to the child He had seen several such cases and several died, and it was no doubt due to infection by the umbilical vessels Next as to the belly band Thanks to the efforts of several teachers, the importance of this has been proved a fallacy The reasons urged for its use were warmth, and to retain the cord dressing Neither of these is necessary, and to retain the cord dressing a heavy netted band may be used If no dressing is employed then the net is not needed The belief that support of the abdominal walls is necessary is also a fallacy Again it was thought to prevent the occurrence of umbilical hernia This, too, is not true The band may prevent an expansion of the walls, compress the contents, and thus produce what we wish to avoid Many believe they have seen this as a result of tight bandaging The bandage then should be abandoned The anomalies, accidents and diseases of the cord deserve more attention Death of the fetus in the womb is not often determined as to its cause Still birth is given as the cause of death, when the cause of the still birth should be given, 90 per cent., he believed, was induced by trouble with the cord

In all cases care should be taken to determine the exact condition of the cord so as to be able to say if any anomaly here caused the death The length of the cord varies from no cord to five feet, usually it is two and a half feet long The implantation of the cord into the placenta varies, marginal, velamentous where the vessels pass for some distance between the corion and amnion, before entering the placental structure, or the cord may be received in the fold of the amnion The latter is dangerous to the fetus as the vessels are liable to traumatism and rupture, causing death from shock, asphyxiation or hemorrhage before delivery Again the jelly of Wharton may be less or greatly increased in quantity, the only danger is from an excess causing the slipping of the ligature and, as it shrinks, hemorrhage Here, where very excessive, do not tie till the size is reduced by stripping Torsion, knotting and coiling of the cord are often observed, the latter may produce occlusion of the circulation and death This occurs most where the cord is very long Knots are rarely tight, still such may occur Coiling round a portion of the fetus is of immense importance It shortens the cord, may produce strangulation of the fetus, may obstruct labor and may cause detachment of the placenta. All these accidents are really beyond the reach of aid, but in delivery, when a part is encircled, draw down the cord, doubly ligate and sever, after which deliver as speedily as possible, to prevent dystocia and death of the fetus Prolapsus of the cord is important, causing death in very many cases It is not a very common accident. Here, place it beyond the point of compression by the parts of the child, and accomplish delivery as rapidly as may be commensurate with safety of the mother The postural position is best to permit the cord falling back to a safer position, but occasionally fatigue to the mother is so great that this must be abandoned The gum catheter and loop may be employed to replace it and often succeeds, but the manual method is best when possible, but with all care is needed when the membranes are not ruptured to prevent this, as it adds to the trouble Podalic version gives much better results when the circulation is feeble or has stopped, then delivery of the head with the forceps will give the best results

Dr J C McCoy related the conditions in a case of foreign body in the esophagus, where the child had drawn in a small tin whistle, he failed to extract it with the long forceps, dyspnea at first was very great, then the wire was tried For some reason the trouble appeared much lessened, hence the parents were unwilling to have any operation performed In the night the dyspnea returned, the child was brought to the hospital, operation performed, and after sixteen days from the removal of the body, the child was well He condemned the efforts to extract by an instrument as often highly injurious

Dr W B Joynson reported a case of foreign body in the bronchus and the operation of tracheotomy

MILK AS A CULTURE MEDIUM AND ITS CAPACITY TO SPREAD INFECTIOUS DISEASES

was discussed by Dr R C Newton Recently there has not been a material addition to our knowledge of bacteriology, perhaps because the subject is so diffiult. Keer has followed Schwartz in advocating milk of goats in place of that of cows for invalids and delicate children It is more uniform in quality the animal selects her food more carefully and avoids much fluid The animal is immune to tuberculosis, hence its milk does not need boiling It has been demonstrated in fresh milk that the fat globules are immediately taken up into the blood and build up the cellular tissue This constituent of cow's milk is destroyed by boiling Boiling also alters the fluid albuminoid of the milk that it is difficult to dissolve and assimilate it in the alimentary canal Milk should not be boiled when its nutritive value is required All writers agree as to the great value of milk as a food Skim milk fed to animals gives good results except in lambs, which do not seem to assimilate it Working horses have been so fed with excellent results A seemingly unnatural food for milch cows is skim milk, but it has been satisfactorily practiced The milk is heated to 155 or 160 degrees and rennet is added, while it is thickening, an equal weight of chaff or finely cut straw is mixed in, well stirred, then it stands two hours and the whole mass is left to ferment for forty eight hours Thus prepared, it is claimed that a gallon of skim milk amply replaces four pounds of concentrated grain food Feeding milk to hogs has been found to cause them to grow, digest well, and produce more uniformly high grade pork Another writer insists that sweet milk makes the right kind of pork and sour milk is not good for them. The use of milk as an economic food is gradually increasing Boat crews trained on milk can always outrow those trained on beer, no doubt this applies to race horses, etc Hygiene of the stable should now be attended to Study the manners and customs of the cow in her wild state and learn how health may be preserved Do not keep too large herds under one roof A number of writers have indorsed the views he offered last year and insist that milk should be fed to children as soon as possible after milking The milk laboratories are having a struggle to exist, and it is doubtful if they can be kept open Pasteurization of milk has encountered much opposition Koplik of New York speaks in no uncertain terms Most of the germs in milk which are harmful to children are not affected by pasteurization Gastro intestinal disturbance follows Milk poisoning has been seen after administration of pasteurized milk As to the spread of infectious disease by milk, there are many cases to report In Philadelphia an epidemic of diphtheria followed the milk route of a man, the dairy was in an unhygienic condition and the sale of the milk was suspended There were eighty six cases and twenty two deaths Vaccinia in Caldwell appeared and spread rapidly and caused great inconvenience to the dairymen The cows were isolated and the sale of the milk suspended The veterinarians who examined the cows claimed that a majority of the lesions were due to what they called "feed boils," little abscesses on the teats and the udders when the cows went out to grass after being kept on grain and dry food during the winter These boils need investigation, as many do not understand their etiology, etc, and some deny their existence There is no doubt such a condition in milch cows more or less constantly in the spring

Experiments to show the effect of infectious germs on the milk glands showed injected cultures of anthrax killed the animals but did not infect the milk By the injection of pus cultures into the veins, in five to eight hours they were present in the milk In two women suffering with puerperal septic infection, streptococci were found in the blood but not in the milk They conclude that infectious germs gain access to the milk by circulating through the glands in the blood stream, and to enter the milk they must pass through the glandular substance through some injury It is recommended that regular microscopic examinations of milk to detect pus must be made Milk is to be rejected when over an average of five pus cells are found on the field of a twelfth inch oil immersion lens An extensive epidemic of typhoid fever was traced to a dairy near Paterson In the study of tuberculosis in milk some advance has been made Tubercle bacilli do not always develop in milk but remain alive and virulent for at least two months and a half One believes it due to overmilking, and urges the law to compel cows to go dry three months after gestation Authorities differ as to bacilli in butter One observer examined eighty specimens and did not discover it in a single one One believes that all tuberculosis in the human race comes from the dairy Mr Nathan Straus of New York has no doubt saved thousands of infants' lives by supplying sterilized milk at cheap rates It is getting to be a fashion to work and write and spend money for the sake of obtaining wholesome germ free milk Even of a Tammany brave it is reported, after being appointed a sanitary inspector in New York City, that he expected to make $20,000 by admitting rotten meat, vegetables and fish into the city, but he was going to get up "a h—l of a reputation" by shutting out impure milk Eternal vigilance is the price of wholesome *food products of all sorts Deaths among children* are due to lack of food inspection and food laws, even as high as 35 per cent. Artificially fed children can never be safe from the great white death Let us never relax our efforts till proper and sufficient dairy laws are enacted and enforced I have in my investigations discovered a custom so mean, revolting and so devilish that I must speak of it The sale of bodies of dairy animals which have died of disease or accident to the bologna sausage man This obtains even in the better class of dairies and would suggest that the dealer in "bob veal" is a philanthropist in comparison with the bologna suasage man I would urge a law that all milk vendors shall be obliged to take out a license as to the condition of their herds, sworn to; water supply, feeding, housing, caring for stock milk handling—the license to be revoked when these matters fall below the standard or when he shall fail to give notice of sickness among his cattle his family or employees, the testing of all milch cattle with tuberculin to be compulsory, the selling of cattle which die of disease or accident, etc, to a bologna sausage man to be punishable with fine and imprisonment

D J LEAL continued the discussion, considering

MILK AS A CARRIER OF INFECTION

He said Time will not allow me to make more than a brief statement of present opinion on the subject. That opinion may be summed up in the following propositions 1 That milk is a carrier of infection, more so than any other one article of food The theoretic and scientific basis of this proposition is explained by the discussion on "Milk as a Bacterial Culture Medium", its truth is established by a vast mass of evidence which has been accumulated by practical experience 2. That the diseases, the infection of which is certainly carried by milk are typhoid fever, cholera tuberculosis, diphtheria and scarlet fever This statement, in so far as it relates to scarlet fever is based upon analogy and practical experience Milk is also capable of developing and maintaining the vitality and the virulency of certain groups of bacteria, the presence of which give rise to intestinal irritation Besides, though not proven, it is considered scientifically possible, and practically probable, that the infection of smallpox, typhus fever, tetanus and malaria may be conveyed through this means

Now as to the common methods of infection of milk by typhoid fever, cholera, tuberculosis, diphtheria and scarlet fever By diptheria and scarlet fever it is 1 Through exposure to infected air This air may have become infected through some patient suffering with one of these diseases, or indirectly through some person or thing thus infected 2 Through exposure to infection in the handling, directly or indirectly, directly, through handling by some person or persons suffering with these diseases at the time, indirectly, through some person or persons, dishes, containers, apparatus or utensils which have become infected by such person or persons By tuberculosis it is 1. Through exposure to infected air, this air containing dust formed in part of dried tubercular sputum 2 Through direct infection from some person or persons suffering with the disease, as by particles of expectoration flying into exposed milk during an attack of coughing, by handling with infected hands, etc 3 Through some person or persons, dishes, containers, apparatus or utensils infected directly by some person or persons suffering with the disease, or indirectly by infected dust, etc 4 Through cows having tuberculosis udders By typhoid fever and cholera it is 1 Through the intentional or accidental addition of infected water 2 Through handling with hands infected by discharges or water 3 Through dishes, containers, apparatus or utensils infected in handling or by water 4. In the case of typhoid fever infection through infected ice

It follows from the above that certain rules must be carefully observed in order to prevent milk from acting as a carrier of infection 1 That milk for food purposes must be taken only from healthy animals 2 Every precaution must be taken to prevent exposure to air which by any possibility could be infected 3 Those handling the milk must not only be personally free from these diseases, but must also be protected from infection through others 4 All premises, dishes, containers, apparatus and utensils must be guarded from infection through persons, air and dust. 5 All water and ice used in connection with milk must be free from infection That these rules should be properly carried out is of vital importance to the consumer and of much interest to the profession, the function of which is not only to cure disease but also to prevent it Unfortunately, however, the producer does not always look at the matter from our standpoint, and is apt to resent, as interference with personal and property rights, our well meant efforts in this direction The only solution of the difficulty is the wider dissemination of knowledge upon the subject, and therefore the better education of the people, which must come through the medical profession

First practical illustration —In October, 1889, thirty four cases of typhoid fever were reported to the Board of Health of Paterson Investigation showed that twenty seven of these cases were supplied with milk from the same dairy Further investigation by my friend, Dr William K Newton, then State Dairy Commissioner, and myself, disclosed the following facts Said dairy was situated in an out-lying township The water supply was from a spring in the milk house, which was about two hundred yards distant from the other farm buildings and out of the direct line of drainage, and from a well in the barn yard The well was so situated as to receive the general barn drainage, as well as that of an immense pile of manure placed within fifteen feet of it and in the direct drainage line Chemic examination of the water supply showed the water of the spring to be pure and that of the well to be badly contaminated The dairy people declared that neither the milk, the cans, the dishes nor the utensils came in contact in any way with the water of the well, that the cover full of water which they admitted putting in each can of milk "for the purpose of preserving it," came from the spring, and that cans, etc, were washed with the same water They denied ever having anything connected with the milk business anywhere about the place except at the milk house, and asserted that water from the well was only used for drinking purposes by the men employed about the barn, and for washing purposes about the house We also found that on the 14th of the preceding month a stranger from Pennsylvania had been employed about the place He had complained from the first of not feeling well, suffered from fever, diarrhea, headache, prostration, etc He held out until the 25th when he was forced to return home On October 5 another man who had been employed upon the place steadily for two years became ill about the same way and left on the 12th to enter the hospital Our twenty seven cases in the city using this milk all developed between October 2 and 24 We succeeded in locating the two employes, one in the Bethlehem, Pa., hospital, the other in the Paterson General Hospital, both suffering with typhoid fever We also found that both these men while ill on the place had been in the habit of using the manure pile which drained into the well as a convenience It was easy for us to reach the conclusion that the first man had been a "walking case" of typhoid, that through his use of the manure pile he had infected the well, and that the second man had become infected through drinking the water of said well The difficulty was to connect the infection with the milk, as according to all the evidence obtainable neither man had anything whatever to do with the milk business The missing link was found, however, when a female servant confessed that she had been in the habit of washing the can covers with water from the well The well was filled up on the 16th and no cases developed after the 24th

Second practical illustration —The average number of cases of typhoid fever in Paterson during the months of November and December for the six years preceding that of 1896, when we were in the midst of a general epidemic due to an infected public water supply was, during November 8 cases, and during December, 5 cases During the first half of November, 1897, 3 cases of typhoid were reported to the Board of Health From November 15 to Jan 1, 1898, 142 cases were reported All of these 142 cases became ill between November 5 and December 15 All but 5 became ill between November 14 and December 15 The number of these cases in well to-do families was far out of proportion, considering the character of our population Ninety nine of them received their milk supply from a certain creamery for all or a portion of the fifteen days preceding the commencement of their illness Of the 43 cases left, 14 had used cream, or ice cream, or soda water containing cream from the same creamery, on one more sions, p the fifteenth and fifth days ess the 142 cases developing d only 29 could not be connected with the product of said creamery The natural conclusion to those who have had experience in tracing epidemics due to milk, and understand its difficulties, is that at least a portion of these 29 cases could have been connected if it had been possible to have obtained the facts in every case Among the handlers of the milk in town or among their families, were 8 cases of the fever In the Paterson Orphan Asylum, which was the only institution supplied with milk from said creamery, there were 9 cases among the 70 odd inmates On November 29, I became convinced that every thing pointed to the milk as the source of infection, and therefore telegraphed to Dr Henry Mitchell, Secretary of the State Board of Health, requesting that he have an investigation made of the state of affairs at the suspected creamery Such investigation was made by Dr A C Hunt, State Inspector, on December 1 During the evening of the same day he reported to me a very suspicious condition of affairs existing there He had been unable to find any possible source of infection outside of the creamery At the creamery he had found that water from a brook was pumped into the creamery for general use through a pipe, the intake end of which was from 115 to 139 feet below the privy belonging to the proprietor's residence, which privy overhung said brook Four or five other privies were situated upon the banks of the same brook within an eighth of a mile He was also informed that the three sons of the proprietor were ill in the house with remittent fever He at once ordered the pipe taken out. At Dr Hunt's request I accompanied him on December 2 for the purpose of making a more thorough inspection I found the creamery situated upon the bank of a brook The premises consisted of the creamery stable, ice house, cheese house and residence The privy overhung the brook about 100 feet above the creamery, and was directly in the rear of the cheese house and residence The water supply to the creamery was first from the brook through a pipe as described above, which pipe had been removed before my arrival, according to orders given the day before by Dr Hunt, and second from a spring in the cellar of the cheese house through another pipe The water supply of the cheese house was from the spring in the cellar, and the residence was supplied from the same source through a pipe by means of a pump The house drain, a wooden box, passed through swampy and made ground at a higher level and about fifteen feet above the spring, entering the brook a few feet above the privy We found that the creamery received the milk of fifty three dairies, and that said milk was all handled at the creamery and sent to Dover, Morristown, Paterson, Newark, Arlington, Jersey City and New York Inquiry from physicians, the creamery proprietor and other residents, failed to give any clue to suspicious illness at any of these dairies I will here state on the authority of the State Dairy Commissioner that all of these dairies were afterward inspected and no source of infection found The three sons of the creamery proprietor were visited, examined and found to be suffering with typhoid fever In this diagnosis both Dr Hunt and the attending physician concurred Their temperatures varied from 102 to 105 degrees, the typic tongue, irruption and diarrhea were present, they suffered from nose bleed and presented the abdominal symptoms Not a single important symptom of typhoid was absent except intestinal hemorrhage, and I am informed by Dr Hunt that two of them afterward suffered from that condition Dr Richard N Connolly of Newark, also produced the Widal reaction in specimens of blood taken from these patients, and isolated the bacillus of Eberth in a specimen of water taken from the cooling vats in the creamery Taken all in all, considering the arrangement of the premises, the privy, the house drain, the water supply, the milk handled upon the premises, the presence of the three cases of typhoid, a better illustration for a lecture upon "How our milk supply might become infected by typhoid" I can hardly conceive There followed a history of the three cases in detail

I have already stated that milk from this creamery was shipped to Dover, Morristown, Newark, Arlington, Jersey City and New York, as well as to Paterson I have no information from Dover or Morristown, but am informed by health officials of the other cities as follows Newark, unknown number of cases among those using milk from said creamery Arlington, 17 cases and 6 suspected cases, became ill about November 20 all except one used milk from said creamery Jersey City, 35 cases taken ill November 15 to 20, 24 used milk from said creamery New York, 9 cases found among those who had used said milk

Third practical illustration —A small outbreak in connection with this greater one may possess some interest. A farmer in an adjoining township ran a milk route in Paterson His supply was from his own cattle Running short on November 13 19 and 27 he supplemented his supply with milk from the before mentioned creamery Between December 1 and 10 his son, living with him, and five of the patrons of his milk route in Paterson developed typhoid fever

Fourth practical illustration —On Jan 1, 1898, a milkman, living and doing business in Paterson, became ill He was supposed to have malarial fever On January 9 Dr, John C McCoy was called in and found him suffering with typhoid fever In the interval between the first and 9th he had continued at his business, personally engaged in bottling and otherwise handling his milk Dr McCoy, at his visit on the 9th, at once ordered the patient to bed and thus broke up his connection with the business Between January 15 and February 1, 27 cases of typhoid fever developed in town, 19 of these cases were supplied with milk by this milkman during that period of his illness between January 1 and 9 The outbreak ceased suddenly here, only four scattering cases developing during the whole month of February, and these having no connection with said milk One of this series of cases was especially interesting I personally attended the case and established the facts beyond the shadow of a doubt, the patient himself being a physician and his attendants more than usually intelligent. On the morning of January 2 the Doctor's usual milk supply failing him, the deficiency was supplied from the establishment of said milkman It was the first and only time that his milk had been obtained at that place The doctor used said milk upon his oatmeal and drank two glasses of it. On January 15 he became ill with what proved in a few days to be typhoid fever

There is no other one article of our food supply which is more valuable, which is more capable of harm, and which requires more watchful and constant care Ignorance and selfishness should not be allowed to stand in the way of our exercise of the right of self protection Thousands of lives are lost every year through want of that constant and watchful care The general public is dependent for its safety in this respect upon the medical profession That responsibility must be met We, as an organized profession, should insist that the State throw around this product of such vital importance, every protection which science and experience teach to be effective

On Wednesday afternoon, Dr **Judson Daland** read a paper on

THE METHOD OF ADMINISTERING AND THE USE OF ENTEROCLYSMS

The only instrumental help is a soft rubber tube, a fountain syringe and a funnel We must not use anything which will irritate the internal mucous membrane He preferred a rectal tube with rather thick walls, two feet long and three-eighths of an inch in diameter Its surface must be as smooth as the finest bougie, the tip slightly tapering, rounded and with a direct opening Eight inches from the end is a black line encircling the tube The patient assumes the position and when the lower bowel is emptied by a small enema the soft tube is well oiled and slowly introduced by rotary movement till it passes the sigmoid flexure and enters the colon The right lateral position is assumed when the cecum and ascending colon are to be irrigated In an adult, eight inches of the tube must be introduced before entering the colon, as indicated by the black line Occasionally the tube doubles on itself or is caught by folds of the mucous membrane This can be overcome by allowing the water to flow from the syringe while being introduced, thus dilating the bowel and smoothing the mucous membrane before it If much difficulty be found or pain, it may be from impacted feces, hemorrhoids, tumors of the sigmoid flexure or rectum, etc Skilful manipulation generally is successful, or we may use the knee chest position The raising or lowering of the reservoir will increase or diminish the flow The liquids employed are water, salt solution, sea water, boric acid, nitrate of silver solution, etc., the temperature between 40 and 105 degrees The quantity depends upon the age and sex and object desired A child takes one pint, an adult, two, three or four pints Ten minutes should be occupied in the work and the liquid be retained that long before being evacuated An urgent desire is felt at first, but can be overcome by pressure on the anal or peritoneal region and rest in bed When colicky pains due to gas from too rapid introduction occur, let off the liquid or introduce it slower If there is abdominal relaxation, bandage beforehand Use it daily every four hours, or alternate days, according to circumstances Even if the first effort is not successful, we often succeed by a renewal It is employed in severe cases of cholera tannic acid being the medicine used, which was vomited, showing that it had passed the valve The conditions in which the enteroclysms are indicated, are obstinate constipation, autointoxication, gout, chlorosis, pernicious anemia, conditions indicating an increased supply of water, as a diuretic, diabetic coma, uremia, cholera Asiatica, typhoid fever, cholera morbus, summer diarrhea, enteritis, pseudomembraneous colitis, chronic dysentery, sunstroke, hyperemia, volvulus, invagination

In the discussion of Dr Daland's paper, Dr **Newton** alluded to the use of chlorin water, and the good results of cold water, and in cholera infantum the temperature is readily reduced by the continual use of water per rectum

Dr **Benjamin** regarded this method as valuable in typhoid fever When he found a sudden fall of temperature he generally saw a hemorrhage from the bowel Then this plan was good Ice cold water was sure to arrest the hemorrhage It also proved very useful to produce antisepsis

Dr **Barker** had for years employed this means, especially in catarrhal jaundice He employed ice water followed by hot water later in the day It is sure to bring away the obstruction He differed as to the length of the tube It must be long enough to carry well up into the bowel, as the solution is better retained

Dr **Daland** in closing, had not mentioned antisepsis, as the washing out makes this less needed and he feared danger from the absorption of the article used Chlorin was useful, as was a 3 per cent solution of tannic acid It inhibited the growth of bacilli, in cholera infantum it was of great value, practically the saturated solution of boric acid is the antiseptic

Dr W B **Johnson** read an essay on

SCHOOL HYGIENE, WITH REFERENCE TO THE PRODUCTION OF OCULAR DISEASE.

He alluded to the consideration of this subject as early as 1800 The special point in this country is the construction of school buildings, arrangement of rooms, furnishing and lighting, as related to ocular disease was brought forward by Dr P A Callan of New York He had concluded after many examinations of school children that the methods of construction were a means of injury to normal vision, as also to the general health and physical development Improvements in some locations have taken place The expense is the main cause of the building of schools without the proper arrangements The movement in behalf of better construction is gaining strength Scientific facts are not appreciated by the layman We must get the public to know the great needs of our children in the schools The most important adjunct is the expensive ventilation The subject is not studied sufficiently so as to operate the less expensive methods The window should be used for ventilation and aeration in the absence of the students The authorities of our State should have regular systematic ocular and physical examinations of our school children Other States have made vast strides in this direction

The report by Dr G T **Welch**, Chairman of the Sanitary Committee of the Board of Education, shows a preponderance of eye disease, etc , in schools poorly lighted and ventilated over those recently erected, with more direct light, etc. This caused a bill to be presented prohibiting the erection of schools where it is possible for them to be overshadowed by other buildings It failed to pass and there is now a retrograde action perceptible Other cities have taken up the matter, and in Paterson a committee has been appointed to confer with the Board of Education to endeavor to have such improvements obtained Philadelphia and a number of Western cities are working up the matter New York has instituted the examination of children in public schools with a plan so simple that results are easily obtained He gave in detail the schedule for the teachers He alluded to the inspections as practiced in Boston, Chicago, etc , and the valuable results obtained both as to eye troubles and contagious diseases This will result in placing children with physical defects in separate classes with selected studies such as they will be able to perform, and thus not detract from the proper advancement of those able to do the entire work of the curriculum We thus may avoid the constant falling by the wayside of so many who are physically unable to perform the work of the usual curriculum Scientific observers show that the myopic state is the result of ocular application This is constantly increasing and the time has come when we must prevent its further increase Recent examinations of volunteers show a very high percentage of rejections, especially of city bred men This should impress our citizens of the necessity of action , public institutions must learn that the work intrusted to them must be in accordance with the best known methods The ideal school house must be built upon a site selected with a view to the possibility of providing adequate light supply for every class room This should be direct not transmitted The window space must be arranged in relation to the desks that all light enter from the left and behind the scholars He then gave details as to scientific construction of the windows, etc , maps, blackboards, etc , to be so placed as not to reflect the light and visible from every part of the room, with a dull surface, the walls etc to be tinted in light colors, preferably subdued grays or buffs, dead finish, the ceiling lighter than the walls Ventilation can not be overestimated, the air must be entirely changed once every twenty minutes The furniture should be of stable character, size proportionate to the pupil who is to occupy it Desks must be adjustable Improperly adjusted seats and desks produce many forms of spinal troubles Specializing the work of teachers requires the changing from room to room of the pupils making it impossible to occupy the appropriate seats by those who have had them adjusted for them Teachers might better be moved, but they object, as interfering with the preparation of blackboards, etc Still, some plan might be obtained to obviate the physical injury to the pupils, even though attended by difficulties to the teachers Paper and black ink must be used rather than slates or lead pencils There should be roomy, airy, well ventilated cloak rooms, the toilet arrangements of the most approved style, and constantly guarded lest they are fouled Any child applying for admission, having reddened or weak eyes, should be at once referred for an examination as to the question of the communicability of its condition, or any developing such condition should be at once sent home with a note and be obliged to present a certificate citing the harmless character of the disease Physical as well as ocular disease results from faulty light, improper position at work and bad air Inspection then is demanded daily Lectures at intervals on subjects pertaining to school hygiene etc , will be of great value both to teachers and pupils While it is likely that many will still suffer from the defects of schoolhouses and the want of proper arrangements, yet the belief is that progress now once started will be constant and more rapid, till in the near future we shall see each and every school fully up to the mark, and in every way provided for the physical welfare of all

Dr L F **Bishop** of New York read an essay on

THE CARE OF CHRONIC CARDIAC DISEASE, WITH A CONSIDERATION OF RESULTS

In the mitral group are included most young people who have acquired a cardiac lesion as a complication of an acute infectious disease, who, while preserving the appearance of good health, still are subject to passive congestion, the so called cardiac cachexia This gives them the high color so becoming but so significant of venous stasis These are less prone to an increase of the cardiac lesion The aortic type includes, generally, older people, or at least young people who age prematurely, are apt to become anemic, emaciate, develop chronic nephritis, etc Many will have lesions of both orifices, but will classify themselves under one or the other of these types There is probably an underlying condition In a person without a tendency to arterial disease the mitral valve is the more liable to suffer in an acute attack, while where there is a tendency to endocarditis the aortic valve, situated where it is, practically at the beginning of the largest artery, is the seat of inflammation In the management of chronic heart cases, it is well to bear in mind these two types, because what may benefit one may be prejudicial to the other The difference is almost the difference between rheumatism and gout, rheumatism representing the mitral cases and gout the aortic cases It is not necessary to distinguish particularly, from the view of therapeutics, between mitral stenosis and regurgitation Congestion of the liver undoubtedly has a broader influence upon the whole economy than we are prone to believe, the blood circulated through the liver again and again without being supplied with those elements that favor its healthy metabolism and which seem essential to its proper purification In addition, the liver has the direct function of producing bile the natural primitive laxative The organ is found enlarged and sometimes its functions are interfered with so as to cause complete jaundice The functions of the liver must be stimulated from time to time by appropriate means but local applications as to the chest should not be neglected Congestion of the kidneys is benefited by digitalis, on the circulation, but where there is albuminuria it must be treated as nephritis Causes of local congestion, whether from displaced or inflamed organs or overloaded viscera, must be treated Chronic constipation is a foe to these patients , it must be met with diet, training and drugs It is a vice of indolence , will power must be induced Give the fluid extract of cascara in a single large dose at bedtime, *instructing the patient to modify the dose* nightly, as it secures a free evacuation At the end of a [illegible]nth the dose may be reduced by drops each [illegible] till [illegible] to five drops This is continued for its [illegible] to [illegible]u ally abandoned. Intermittent ca[illegible] al When laxatives must be used, the repeat the same process, not to take a single large dose to be followed by diarrhea, but take the drug for a series of days, gradually abandoning it. The evils of constipation are so great that this introduction of the subject is fully justified The idea of influencing the course of cardiac disease by physical means is no new thing, and yet there is hardly any therapeutic system with so radical a basis that has been as frequently advocated and then discarded or neglected The reason is not clear, but may be traced to the injudicious claims of over enthusiastic advocates The advocates of the Schott system bring forward evidence to prove that there is great improvement under exercise slowly and regularly carried on The chief effects claimed are a slowing of the pulse and a diminution in the size of the heart The plan of treatment is not recommended in aneurysm or where there is a high degree of tension, nor is the exercise all of the treatment The patients also receive baths with mineral constituents, as chlorids of sodium and calcium, at first at a temperature of 92 degrees from six to eight minutes, then the proportion of sodium is lowered and free carbonic acid gas is present in abundant quantities Climate, with special reference to altitude on cardiac cases, must be studied as to the individual When the valvular lesion is grave, the patient should remain at a low level But in cases where the circulation is well carried on, but with persistent murmurs, with the probability that anemia is a strong factor in their production, patients may improve in a high sunny climate It seems to be agreed that the removal to a high altitude has the immediate effect of increasing the red blood corpuscles The cause is not well established I would suggest that the rarefied air brings an amount of oxygen to the lungs in a diminished quantity, thus creating a demand for more corpuscles to gather in the oxygen for the use of the system Change from an indoor to an outdoor climate is a great deal a matter of volition The open windows at night and the waking hours spent out of doors, with the adaptation of home life to the system that would be found in places specially resorted to for health, approximate closely in results what is accomplished by health resorts Too often the means for a change of climate are said to be lacking when the knowledge and moral force are really the elements needed The influence of the mental health upon the course of cardiac disease is well shown by instances of persons who go on in comparative comfort for many years through the cultivation of even living and quiet thinking This is especially true of the heart damaged in early life that has placed a limit on the possible activities These patients who adapt themselves to the inevitable are not made unhappy thereby, but are often rather spared the irritation of the average man who believes that his progress is retarded by his own indolence In fact, the treatment of heart disease is the treatment of the whole body in each of its divisions The physician must stand in relation to the patient with chronic heart disease as the captain does to the ship, constantly guiding, and not as the occasional pilot taken aboard when special danger threatens The physician has the power to save the patient from dangerous conditions, but at each time with a loss of reserve force and with a prospect of a sooner return to the same dangerous condition Far better is it for the physician to be put in charge before the rocks are encountered and disaster is threatened It is important to dispel from the mind of the cardiac patient the notion that his chief danger of death is a sudden one He should be instructed that the probabilities are that if he dies of his heart trouble the death will be gradual, and he should be warned that the first part of the descent from the plane of good general condition marks the danger point. He must be taught to believe that in him disturbances of digestion, loss of color, malnutrition, particularly dyspnea and edema of any kind, should immediately result in an overhauling of his plan of life and system of management.

(To be continued)

PRACTICAL NOTES

The Efficacy of Urotropin in Phosphaturia is announced by L Casper of Berlin, who states that one to two grams a day will suppress the phosphaturia, which does not reappear again for a long while, if at all The use of mineral acids, the usual treatment, is only effective while the medication is kept up —*Semaine Méd* , November 10

Hemoptysis —In the *Philadelphia Medical Journal* for July 16, Thomas makes a report on the use of atropin hypodermically in the treatment of hemoptysis In his seven cases the drug acted promptly and well, except in one case, and often when all other remedies had failed He believes the evidence sufficient to justify the continued use of atropin hypodermically in any serious condition He considers the ice-bag to the chest of doubtful utility, except that it quiets the mental state

Restoration of the Urethra —Froelich reports two cases in which the urethra had been destroyed in the course of childbirth, in which he has restored the canal with such success that the patients are freed from their former troubles and normally continent The external meatus was intact and he inserted a trocar, passing through this and through the length of the superior urethral wall to the bladder, thus opening a passage through the inside of this thick muscular wall which answers perfectly for an urethra He is watching the patients for any indication of contraction in the passage, ready to dilate the passage if necessary, as the conditions are similar to those following external urethrotomy in men, although so far no contraction has occurred in his cases —*Presse Méd* , November 6.

Gastrorrhagia Cured with Injections of Hot Water —Prof R. Tripier (*Semaine Méd* , June 1) proclaims the surprising success of rectal injections of water at 48 to 50 degrees C , in arresting and permanently curing a number of threatening cases of gastric hemorrhage and black feces, which were about to be operated as a last resort. The patient reclines motionless and makes no effort to retain the water, which is injected at least three times a day No food nor drink of any kind is allowed (except rectal, alimentary injections and artificial serum if thirst is excessive) for a week, when all trouble is usually at an end He advises prompt application of this treatment at the first indications of gastrorrhagia, and suggests that it may prove effective in other hemorrhages by the reflex action of the hot water on the nerves of the intestines, which may possibly affect all sources of hemorrhage, internal or external

Treatment of Herpes Zoster —Dr Leonard Weber (*Medical Record*) prefers locally at the onset, bismuth subgallat and talcum in equal parts, with sterilized gauze as a cover When this is uncomfortable, subnitrate of bismuth, one part, to cold cream, three parts, may be spread on the lesions, to be contued until healing results For the neuralgias after herpes he confides somewhat in ten to fifteen grain doses of quinin two or three times a day for a week. In a case of neuralgia after cervico brachial herpes in an old man with sclerotic arteries, he gave for a month, with success, iodid of potash, grains x to xx and strychnin, grains 1/30, thrice daily Aside from drug great quiet, in an even temperature, with good feeding and the essentials for restoration of normal bodily functions, are peremptorily demanded The galvanic current may be a resort after quinin fails, but careful nursing, etc , constitute the really important adjuvants

Simple and Effective Substitute for Hot Cataplasms —With a continuous flow of hot water through a small flexible lead pipe, wound spirally around a joint, all the benefits of a hot poultice are secured with none of its disadvantages The patient can attend to the simple process himself, with a couple of kitchen sauce pans and an alcohol lamp on a table beside him. The lead pipe communicates at each end with one of the pans by rubber tubing The current is started by suction, when it continues indefinitely A faucet in the outlet tube regulates the flow, allowing only a drop to escape at a time The joint is held still and the heat regularly diffused by a shield made of three layers of plastered mull applied before winding the pipe around it The same apparatus can be applied to the chest or abdomen, winding the tube in a flat coil over the plaster shield, or to the neck, etc. It has been well tested at Trendelenburg's clinic, with surprising success in gonorrheal and rheumatic joint affections, and seems to solve the problem of a simple, inexpensive, clean method of applying heat more or less permanently to any part of the body —M Wilms, *Deutsche Med Woch* , June 9

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SATURDAY, JULY 30, 1898

THE MILITARY GOVERNOR OF SANTIAGO

'En manos esta el pandero que le sabra bien taner

The Public Service column of the Journal, May 7, 1898, page 1136, contains among other notices the following

"Captain Leonard Wood, Asst Surgeon, is relieved from duty is this city, Washington, D C , and will proceed to the following named places in the order designated, for duty in connection with the recruitment of a regiment of mounted riflemen to be organized under Section 7 of the Act of Congress approved April 23, 1898 Guthrie, Oklahoma Ter , Santa Fe, N M , Phœnix, Arizona Ter , Carson City, Nev , Salt Lake City, Utah, Cheyenne, Wyo , Boise City, Idaho "

At that time who could have imagined what fate had in store for Assistant-Surgeon Wood?

The rapid organization of the "Rough Riders", the election of Doctor Wood as colonel, their success in being sent to the front with the first expedition, their bravery and gallantry in action, the epigrammatic advice of Colonel Wood to his men in the trenches, "Don't swear! fight!", the promotion of Colonel Wood to be Brigadier-General, for gallantry on the field of battle—all these events have passed so quickly that it seems almost like a fairy tale

General Wood has now succeeded General McKibbon as Military Governor of Santiago, and we feel sure that the choice of a medical man for this great and responsible position will result in great good to the country, the army, and the world—the country and the army by the enforcement of sanitary regulations while the troops remain in the vicinity of Santiago, and the world will be benefited by having eventually another healthy port in the tropics

The sanitary officer can do little unless either clothed with ample power himself, or backed by those in authority General Wood being invested with full authority, is now in a position where his sanitary training in the army will make him an ideal sanitary officer, and we fully expect to hear, in time, that Santiago, from being a danger point to the world's commerce, has advanced to the front rank as a salubrious spot

No other man has ever had such a glorious opportunity, and General Wood's record, although brief, is such as to give every assurance that this great sanitary work will be performed wisely and well As the Spaniards say, " the drum is in the hands of one who knows well how to beat it "

NON COMBATANTS

When Assistant-Surgeon John Blair Gibbs, of the United States Navy, was shot to death bv the enemies of his country, to whose hostile fire he was exposed in the performance of his official duty, the word 'non combatant," by which he and others of his class have been almost sneeringly designated, ceased to have the pretense of propriety When an assistant engineer yielded up his life in the engine room of the *Maine*, along with the line officer who was likewise at his special station, the quibbler who would continue to dub the former only a staff non-combatant and the latter a military fighting man, would deserve ten fold the contumely he would have imposed upon a brother soldier When an assistant naval constructor performed the most heroic act in the existing war and won the admiration of soldiers of prowess all over the world, the bright light of his brilliant achievement brought into pitiable prominence the littleness which would deny him the right and title of a military officer

It is not at all likely that these will be all the instances by which the staff officers of the Navy will vindicate their claim to be considered *bona fide* combatant officers, and though they have no Victoria Crosses displayed upon their breasts as on their British confères', to bespeak deeds of valor signally conspicuous where all men are valiant, the common sense of the American people and the justice of American legislators will surely recognize that tweedledee and tweedledum are miserable distinctions between men whose bodies are riddled by bullets on the self-same field of battle

Bracketed between the names of Major Eskridge of the Infantry and Second Lieutenant Turner of the 6th, one reads among the wounded Dr Danforth, Assistant-Surgeon, instead of First Lieutenant Danforth of the Medical Department, a careless oversight, showing how the old opinion of the medical officer as "nothing but a doctor" still lingers Since in the army tardy but complete recognition of the military equivalence of the medical officer's status and function has been accorded, and when First Lieutenant Danforth of the Medical Corps of [illegible]ed fr[illegible] the wounds he had received shooter while he was in the front in the very act of caring for other wounded, his real brothers in arms, who placed him in a soldier's grave, would be the last to say that he was only a non-combatant

When WINTHROP CHANLER fell wounded at the attack on Las Tunas, Drs LUND and ABBOTT carried him into the brush and all three sank up to their necks in the swamp Dr LUND, who was formerly a German army surgeon, and who is a giant in strength, managed to extricate himself, stripped off his clothing and swam in the darkness to find the ships A boat from the *Florida* picked him up and he was taken over to the *Peoria* As the strange figure clambered up the ladder, the sentry on guard at the gangway challenged him but Dr LUND brushed past him and strode in his nakedness up to Lieutenant RYAN, gave the customary formal salute, and with the utmost gravity said, "I have come to report that the men over here require assistance" When CHANLER and Dr ABBOTT were rescued they were still in the water up to their necks Does it not savor of the ridiculous to call CHANLER a combatant and his heroic life-savers only non-combatants, merely because they were medical men?

The present war makes evident the difference between the military and naval services in this matter of the recognition of the military status of the so-called non-combatant staff Among the roughest riders of Dr LEONARD WOOD's Rough Riders—he a Colonel and since a General, every inch of him, albeit a doctor—is Dr CHURCH, a medical officer, one of Princeton's champion athletes, who wears a sword and carries a revolver, knowing well how to use both, and from the medical colonel down to the cowboy private, not one would intimate that he was only a non-combatant, when he checked his riding and dismounted to succor a wounded comrade of the troop The shot that enters a man-of-war's boat at the bow rakes the men pulling at the oars, and lands in the stern-sheets to maim or kill the lieutenant in command or the assistant-surgeon by his side, does its deadly work without regard to which is combatant or non-combatant, nevertheless antiquated tradition and ingrained custom concede to the dead as to the living medical officer only a relative (quasi or simulative) rank, instead of the same military status in the performance of an equally honorable, responsible and patriotic duty, involving precisely the same exposure to danger and the same risk of life

The practical consequence of this difference in the status of the medical officers of the two services is pointedly illustrated in the instances of the hospital-ships, which the exigencies of the prevailing war have called into existence The announcements that "yesterday the *Olivette* was made the military hospital-ship of the Fifth Army Corps and put *under the command* of Major A H APPEL of the Medical Department of the United States Army," and that "tomorrow the U S Army Hospital-Ship *Relief* will sail *under the command* of Major GEORGE H TORNEY, Surgeon United States Army," would occasion no remark or question in the Army, but in the Navy the assumed non-combatant character of the medical officer, however high his relative rank, precludes his discretionary control, charge, a technical command, and it is therefore considered essential that a line officer shall be on board as the authoritative superior dignitary It would not be enough for the commanding medical officer, as in the army, to have a navigating officer under his command to perform the necessary nautical functions of going and coming, of anchoring and getting under way, of heaving to in a cylone or edging off from a lee shore naval tradition requires that there shall be a line officer, whether Admiral or Ensign, to exercise the prerogative of command, as well over Medical Director as over Acting Assistant-Surgeon Hence the naval ambulance-ship *Solace*, although the creation of a medical officer and the embodiment of his ideas, is actually commanded by a line officer who directs these medical officers what they shall do or leave undone, nor has the Surgeon-General of the Navy the direction of its movements, as has his Army colleague of the vessels in the military service, which fly the Geneva Cross

The *Navy Personnel* Bill, which failed to be enacted at the session of the Congress just adjourned, although indorsed and earnestly advocated by the Navy Department, after a remarkably able argument in its favor by former Assistant Secretary ROOSEVELT, proposed to do justice to one branch of the so called non-combatant staff, by giving its officers actual (that is positive) rank, thus recognizing their equivalent military character, but the bill would have failed to do equal justice to the other staff departments—especially the medical corps—whose *bona fide* military importance has been already so often demonstrated during actual hostilities

Hence, the medical officers of the Navy have very modestly and respectfully asked that they shall be put on precisely the same footing as medical officers of the Army of corresponding grades and length of service As Colonel A of the Medical Department of the United States Army is never by any possibility confounded with Colonel A of the United States infantry or artillery, and as he never attempts to exercise a colonel's authority over a regiment or a battery or outside of his own department, it is claimed with equal reason that Commander B of the Medical Corps of the United States Navy will never go on deck to supplant Commander B of the line in getting up steam or coming to anchor, or in any other way exercise authority outside of the Ship's Hospital or over the men of the Hospital Corps Just as Major C of the Medical Department of the Army has had his rank and status defined beyond mistake or question, and his equivalence with all other Majors of Artillery, Cavalry, Infantry, Engineers, Quartermasters, Commissaries, etc, determined, so does Lieutenant Commander C of the Medical Corps of the Navy, ask that he be legally declared to be entitled to all the rights, privileges and immunities of all other Lieutenant-Commanders, be they of the line, engineer, construction, pay or other corps, claiming that his intelligence, naval training and common sense would prevent him from attempting to violate the law by asserting or assuming an authority which his commission does not confer, and for which he would be certainly and properly punished by a court of his own colleagues, should he do so

Our British cousins have satisfactorily demonstrated their right to military precedence The London *Lancet* says "When the medical history of the last war in India is written it will prove interesting reading There were many difficulties overcome and hardships endured with the usual element of danger," and goes on to relate how, when the medical officers were at work extracting fragments of a missile from the leg of General **Woodhouse**, the Afridis crawled up and suddenly blazed into the hospital tent, sending thirteen shots through the canvas without disturbing the operation, "which went on as if there was no Afridi within a hundred miles" Surgeon-Captain **Beyts** and Surgeon-Lieutenant **Hugo** have added their names to the already long list of medical military heroes in the British Army, and Lieutenant **Ford**, whose life was saved by the latter, after remaining over three hours with his unconscious wounded patient under a hot fire, will doubtless indignantly deny that a Surgeon-Lieutenant is not every bit the combatant hero that he was himself The Victoria Cross pinned upon the breasts of such men loses nothing of its value as a distinctly military reward Rather, the recital of the unparalleled deeds of bravery which have led to its bestowal in these instances, which lacked the maddening stimulus of the charge or the fierce excitement of an engagement, adds luster to the honored roll of its wearers The percentage of medical officers who have won the Victoria Cross is already so great that its conferment upon another has ceased to be exceptional, and the corps to which these officers belong can no longer be denied an essentially military, therefore, combatant prestige

What is in a name? A Lieutenant-General ought to be a less resounding title than Major-General, but it is not, and mere General, without any adjectival qualification, outranks all other kinds of Generals It is the acquired significance of the title which has given each its importance, and military heroes are correspondingly exultant and flattered by their bestowal *Surgeon*, however, has ceased to be even technically a proper designation for a medical officer either of the Army or Navy, and *Assistant-Surgeon* is an even more objectionable title for a subordinate who does not necessarily assist So the attempted professional designation of the Colonels and Lieutenant-Colonels of the Army Medical Department, as Assistant Surgeon-General and Deputy Surgeon-General has not been generally acceptable Lieutenant-Colonel Jones of the Medical Department, U S A, Medical Director of the Department of the East, Major Brown of the Medical Department, Senior Medical Officer of the Fifth Army Corps, Captain Smith of the Medical Department, U S A, 14th Volunteer Infantry, are explicit and unmistakably distinct as would equally be Captain White of the Medical Corps, U S N, Medical Director U S Naval Hospital, Norfolk, Commander Green of the Medical Corps, U S N, Fleet Medical Officer, Atlantic Station, or Lieutenant-Commander Black, of the Medical Corps, U S N, Senior Medical Officer U S S *Hawaii* With equivalent pay and privileges, the matter of line and staff contention would be forever settled, for there would be nothing left for which to contend The *amour propre* of each department of the service would be satisfied and respected, the special functions of each would be defined, and the service become, as it should be, a brotherhood of men enlisted in the common cause of serving and defending their country

And it may be pardonable here to state that a greater enemy than armed men and belching cannon is to be combated, and that by medical men alone—the enemy that lurks in the dark and strikes in the back, against whom earth-work and trench and rifle-pit are no protection, but into whose lair the medical officer walks undismayed, though knowing he may be the first of the forlorn hope to fall No stricken soldier in the field will gainsay the title of *combatant* to the medical comrade who has saved him from death at the hands of this unseen foe

MALINGERING

In these enlightened times, when the great public knows well its rights, and knowing dares maintain, it is indeed rare for one of its members to receive an injury that he does not endeavor to make the party or parties whom he deems responsible for his suffering, compensate him for at least the losses he sustains during his forced retirement from his occupation Such compensation is an act of justice, and in a majority of cases would be readily met by the company or individual responsible But the injured man is rarely content with simple justice, his friends and his newspapers have warped his judgment and filled his mind with stories of large sums extorted from companies by men not nearly so severely injured as he imagines himself to be Not infrequently a lawyer belonging to the "shyster" class arrives at his home before he has a chance of having his injuri [illegible] properly dressed, and excites [illegible] pr[illegible] ising him a good sum in re[illegible] "[illegible] it will not cost you a cent [illegible] dear sir" So suit is entered for many thousands of dollars, though happily the plaintiff is often after a few examinations ready to compromise for as many hundreds or less At this point the most common of the various forms of malingering enters an aggravation more or less marked of a symptomatology really present He naturally thinks that the greater the amount of his apparent suffering, the greater the sum of money he will get, and the more readily the responsible party will be inclined to settle without suit Your true malingerer usually disregards small surgical affections, fractures, dislocations, sprains and the like, and strikes directly at the nervous system, for he seems to know instinctively the difficulty of diagnosticating nervous diseases even among specialists He then has a local paralysis or a "railway spine," about which he has read so much The affection fixed upon may be feigned entirely, which is rare, or as mentioned above symptoms really present may be exaggerated It must not be thought that this latter form is always feigned, and merely for puposes of gain Surgeons who have attended a number of traumatic cases in which the injured parties have no chance of obtaining compensation, know well that neurasthenic symptoms not infrequently develop, and the victims have no idea but that they are seriously and permanently injured It is astonishing what large numbers of such cases come to trial, and it is still more surprising with what readiness corporations will compromise even grossly unjust claims rather than submit to a suit, for well they know that the jury is prejudiced in favor of the injured party before a word of testimony has been offered It is the poor man against the "grinding monopoly," and the average jury will side against the rich corporation every time, regardless of law or justice Indeed, instances are on record where the judge was compelled to take the case out of the hands of the jury and award the fight to the defendant That the medical profession is responsible in great part for this deplorable state of affairs cannot be denied and such things will continue until legislation decides the exact status of the so-called "medical expert" The term now is not only one of reproach but of ridicule as well, indeed, it could hardly be otherwise when the patent medicine charlatan, from the mere fact that he is the holder of a diploma, is able to meet the real scientist and deny the latter s statements with an equal chance of being credited

There are forms of malingering where considerations other than those of a pecuniary nature are at stake for this is a semblance of disease that involves classes, races and conditions of people, the sexes to an almost equal degree, and as regards age, from the cradle to the grave The efforts of a child to escape punishment and the exaggerated complaints of the septuagenarian to excite sympathy and attention are familiar examples Not common in this country, where there is no compulsion to a military life, but of exceeding frequency abroad where some countries demand service training of all able-bodied males, all sorts of injuries and diseases are feigned to endeavor to evade the sharp eyes of the examining surgeon Especially is this the case in times of actual fighting, when drafting of men become necessary to recruit the forces in the field, in times of peace, exaggeration of injuries or diseases *said* to have been inflicted or brought on when the claimant was a soldier "*Said* to have been," for a history of the case may reveal the fact that the injury occurred years before enlistment This "substitution of origin" (Bailey), as it is called, plays a most important rôle in the science of malingering

Probably the most successful of simulators are the poor and vagrant of our great cities, hospital habitues as they are sometimes called The care and comfort, warmth and good food that the various hospitals and asylums afford, draw large numbers of these people of both sexes to their doors, and expert receiving physicians are often tricked by their artful representations When in the wards their former experiences stand them in good stead in making themselves out as ill, with the result of obtaining comparative comfort for a few weeks, after which the experiment is tried elsewhere Almost every physician of hospital experience will recall such cases which have been discharged after a few weeks with the diagnosis of "malingerer" The ailments they will counterfeit embrace the entire range of the science from medicine to the specialties Their particular trouble largely depends on the particular ward they have occupied during a former stay Indeed it is not too much to say that they study the symptoms of their immediate neighbors with as lively an interest as the attending physician Neuralgia and rheumatism, headache, epilepsy insanity and coma are especial favorites The obstetrician not infrequently finds cases of phantom tumor The surgeon encounters cases of simulated tumors and strictures, while simulated blindness and deafness are by no means rare finds for the specialist in those fields One of the most common attempts in recent days to extract money from a recalcitrant corporation is the attempt to palm off an old hernia as being the result of some recent injury Some most flagrant attempts of this character have recently fallen under our personal observation

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THE DANGERS OF TINNED FOODS

From time to time we read in the daily press accounts of poisoning by food products, more particularly by those that are prepared in large quantities and sold in tins or canned packages Perhaps it is just as frequent, if indeed not more so, for investigation to reveal that the really poisonous effects are due to carelessness in the preparation or in some defect of the cooking utensils and that there were no canned goods used whatever But this fact does not do away with a certain prejudice or fear that impels the public to attribute, on the first impulse, all these accidents to the use of these products, though not apparently with the result of very greatly reducing their consumption Ptomaines, we are aware, may be generated in fresh as well as in preserved meats, and acid can corrode cooking utensils as well as preserving tins, but it is more natural to assume that time and defective preparation in the wholesale establishments are at fault than that the sufferers themselves were in any way responsible The cheapness and convenience of the canned goods, however, keep them in popular favor, and the temporary loss of confidence in their wholesomeness seems on the whole to have little effect on their sales. It is estimated that in Great Britain alone their consumption amounts to 581,000 pounds daily, a figure that indicates the extent of their demand when one bears in mind that it can be, at best, but a small fraction of the total consumption

There are, nevertheless, some special dangers in canned foods if they are carelessly or fraudulently prepared, and these have been very well discussed by Dr Brown, an English local health officer, in a paper in the *Journal of the Sanitary Institute* for April of this year The dangers of canned meats are from ptomaines, and these may be developed before canning, after canning, and more than at any other time after opening The first contingency is probably a rare one, though it is possible that unwholesome meats may be put up and the methods of preparation be insufficient to counteract the growth of ptomaines In cases of putrefactive changes after canning, the bulging tin is generally a sufficient indication, but there is no security against bacteria after the package has been opened and the contents not immediately disposed of The age of the contents, other things being equal, is no bar to their wholesomeness, Dr Brown has tested packages twenty and thirty years old, and except a slight loss of freshness of flavor found them still serviceable

Canned fruits, on the other hand, are more liable to deteriorate with age, and the dangers in their case are chiefly the absorption of mineral poisons from their receptacles This goes on at a steadily increasing ratio each year, and freshness is therefore a prime requisite for their perfect wholesomeness It is probable that many acid canned fruits contain appreciable if not really dangerous quantities of malate of tin and other salts The quality of the tin and solder used is an important element in the case, Dr Brown holds that over 1 per cent of lead in the tin or over 10 per cent in the solder should be considered dangerous In some cases considerable solder escapes into the can from careless soldering, and this is also objectionable It would be in all respects better if fruit could be put up exclusively in bottles or jars without even metal tops, as regards the question of safety to their consumers

The cautions Dr Brown suggests may be repeated here They are Use soon after opening, keep the cans in a cool place, as heat favors fermentation, examine plating of interior of can and distrust corrosion or any bluish slate color as risky, avoid resoldered goods, and do not take the cheapest, as they are likely to be the worst A valuable reform which he recommends would be to have the date of canning stamped on every package, and this is the most important for canned vegetables and fruits This is, it is said, compulsory by law in Germany, and it would be well were it so for the home market also

In spite of all the possibilities of evil, the rarity of trouble from the use of canned goods speaks well for the general honesty of the manufacturers It is well that it is so since, were it otherwise, a cheap and palatable class of foods would have to be distrusted and often, in common prudence, disused

WAR NEWS OF THE WEEK

The war news of the week has not been of an exciting character, although it concerns the progress of an outbreak of yellow fever in an army of twenty thousand susceptible men exposed to the infection, under conditions of fatigue and exposure which would be expected to measurably increase their susceptibility The first cases of yellow fever appeared July 7, when four cases were taken from a house occupied by our troops at the front A fifth case was discovered next day in a house in Siboney, directly across the road from the fever hospital established by Dr Guitéras The danger of occupying such houses was strongly set forth and widely distributed in a circular from the office of the Chief Surgeon, but this advice was disregarded The houses, filthy beyond measure, were crowded with soldiers and utilized as offices and storehouses Shortly after this they were all destroyed by fire under the orders of the commanding general While Colonel Greenleaf, chief surgeon on the staff of General Miles, remained at Siboney he telegraphed daily the progress of the disease, but since his embarkation for Porto Rico the information received from the vicinity of Santiago has been meager The latest information, under date July 23, is to the effect that there are about fifteen hundred patients in the hospitals but that only one hundred and fifty of these are yellow fever cases Meanwhile the troops have been moved to better camping grounds where a fine breeze usually blows from 9 A M until sunset The atmospheric humidity at the present time is very great, a constant steam or mist rising from the ground Heavy clouds hang over the hills most of the time, and on the lower grounds early in the day Rain falls only in the afternoon [illegible] or fc[illegible]mes a week, and although [illegible] they are so heavy [illegible] give little protection The ground is so porous and its surface configuration so irregular that the heavy rainfall is either absorbed or drained off in a short time

Such are the conditions before the army medical officers of the Fifth Army Corps at the present time Whether they will be able to control the disease by prompt isolation of yellow fever cases, and the removal of *regiments from infected localities remains* to be seen Up to the time of the surrender they were handicapped by the military necessity which required the troops to occupy certain lines, irrespective of yellow fever infection, and during that time the slow progress made by the disease shows the influence of their restrictive measures It is to be hoped that they will be able, under the better conditions now existing, to embark the regiments for the United States with a clean bill of health, while the immune volunteers take their place as the garrison of Santiago

WOUNDS AND DISEASE AT THE FRONT

Medical officers returned from Cuba with sick and wounded from General Shafter's command have given us interesting details of the medical and surgical work during and after the engagements at Santiago On the debarkation of troops at Baiquiri they were pushed rapidly forward, each man carrying his blanket roll and three days' rations Regimental surgeons with their hospital corps men accompanied their respective commands, but all regimental medical and surgical chests, dressings, etc, were of necessity left behind, as no horses or mules had as yet been landed Surgeons applied to higher authority for their medical property and sent back to Baiquiri to endeavor to recover it, but in the meantime the vessels, emptied of troops, had been ordered out of the harbor and had gone to ports unknown or lay too far out at sea, with no way of communicating with them Ultimately a launch was procured and some of the regimental medical supplies were gathered up from such of the transports as could be reached Thus, although the army had embarked with adequate first aid supplies, only a percentage of them was available when the time came for their use Fortunately, however, the men carried the necessary dressings on their persons, for every soldier of the army, with the exception of the men of one regiment, was provided with the official first aid dressing packet containing two antiseptic compresses of sublimated gauze in oiled paper, one antiseptic bandage of sublimated cambric with a safety pin and one triangular bandage, also with a safety pin Fortunately also, the arrival of the ambulances from Tampa and of the *Relief*, the hospital ship despatched by the Surgeon-General to meet just such an emergency, put an end to what would otherwise have been a difficult situation

According to Captain E L Munson, who was one of the operators at the field hospital, surgical operations were required only in shell wounds Wounds by the Mauser bullet were apparently either immediately fatal on the field or trivial in their subsequent course There were no explosive effects from the brass jacketed bullet of the Mauser rifle, the wound of exit in most instances being scarcely larger than that of entrance Long bones were usually perforated, without comminution, often even without fracture Only about thirty-five cases required splints Abdominal wounds were classed among the immediately fatal, as few of them were seen in the hospital There was little hemorrhage The Mauser bullet deformed frequently, but even then it did not make the ghastly wounds that were expected Keyhole wounds made by the bullet when striking with its long axis were fairly common Many bullets, even when fired at short range, lodged instead of perforating In eight out of forty-one consecutive cases the bullet was lodged This was attributed to an inferior or a deteriorated character of the powder in the cartridges supplied to the Spanish infantry Antiseptic first aid was eminently successful, wounds healing quickly under a scab

Malarial fevers were infrequent at first but after the rains began to fall they became quite prevalent A number of cases of typhoid fever and measles occurred, due to infection brought with the troops from the United States Heat exhaustion and a mild type of sunstroke incapacitated a number of men from duty Diarrheas and dysentery are rare, a fact attributed to the purity of the water supply Baiquiri is supplied by a pipe-line from the river of the same name, a pure, limpid stream flowing rapidly over a pebbly bed The water at Siboney comes from the pipes of the Juragua Iron Company, which run to their wharves near the city of Santiago, following the tracks of the company's railroad for about twelve miles The hospital is pitched close to this pipe at Siboney and has thus an easily available and unlimited supply of pure water, while at the front the troops obtained water from springs and from the Aguadores, a branch of the San Juan river Yellow fever is of course the disease in which is centered the interest of the medical officers at the front

CORRESPONDENCE

Treatment of Tetanus

Austin, Texas, July 20, 1898

To the Editor —I send you report of a case of tetanus treated successfully by the use of antitetanic serum The diagnosis of the case I believe to have been correct, as shown by the history, the symptoms, the response to each dose of the serum, and, further, that the patient lived ten miles in the country, and was not familiar with the symptoms of tetanus

A study of this case shows the immediate response to the antitetanic treatment, i e, the pulse, temperature, pain, stiffness and restlessness were all reduced soon after the injection was given It can further be seen that the dose of serum should have been repeated sooner in this case, but owing to the inaccessibility of the patient it could not be done There were no unfavorable effects from the use of the serum, not even an eruption

I give the case in detail, as follows On June 14, I was called to see a case of tetanus, in consultation with Dr F A Maxwell, near Austin, Texas Minnie T , age 19 years, weight 180 pounds, of robust constitution, on June 6 was in the cow and horse lot and stepped on a rusty nail which entered the fleshy part of the foot for some distance, the nail was removed, there was but little bleeding, turpentin was applied externally and no more notice taken of the foot other than that caused by the attendant soreness usual in such cases, until the afternoon of June 13, when she noticed sharp pains in the wound, running up the leg, especially noticeable when pressure was made over the seat of injury, also pains extending up the spinal column, especially the neck, with a decided stiffness of the jaws and a twitching of the muscles of the arms and legs at times and much nervousness and excitability Dr Maxwell had examined the foot, found it tender in the neighborhood of the wound, which had healed, and he made an opening and washed it out with carbolic acid solution and ordered it poulticed to relieve the pain, gave doses of calomel to move the bowels and left potassium bromid to be given every few hours as indicated The next day I was called in consultation with Dr Maxwell and found the patient with a pulse of 108, temperature 99 5 degrees, very restless, the pains seemed to run from the foot up the leg and extend on up the spine, there was much stiffness of the jaws, she could, with much difficulty, open the teeth as much as half an inch, peculiar sensations, as she described them, would run up her back and the slightest breeze was sufficient to bring them on Dr Maxwell and I decided to administer antitetanic serum at once We thereupon, at 4 P M , June 14, injected subcutaneously, in the right gluteal region, one third of a ten c c bottle of fresh liquid antitetanic serum (Parke, Davis & Co), using the regular antitoxin syringe and observing all antiseptic precautions The patient was seen again at 10 P M She had slept from 6 to 9 30, felt well, pulse 90, temperature normal, stiffness greatly reduced in jaws and slight perspiration

June 15—Seen at 10 .30 A M pulse 73, temperature normal, no pain, but tenderness in the muscles of the foot, a little stiffness in the jaws, had rested well the night before until 5 A M , she was then given potassium bromid and slept quietly until morning

June 16—Seen in the forenoon, she was a little restless, slept well the night before, condition as on former day, except pulse more frequent (90), temperature normal, at 6 P M was more restless, complained of the jaws, soreness in the limbs, pain in the stomach, temperature 99, pulse 96, the second dose of the serum was given, also potassium bromid and chloral hydrate

June 17—Patient slept well the night before, all the symptoms had improved and the pulse and temperature were normal

June 18—Found the patient much improved in appearance, temperature 99, pulse 80, cheerful, no nervousness, though complained of tired feeling in the muscles of the jaws when the mouth was opened widely, had been gaping all through the day, could open the mouth widely and had eaten a good dinner

June 19—Temperature normal, pulse 80, restless until twelve o'clock the night before and then slept well, appetite good, complained of some pain in the foot and leg

June 20—Temperature 99, pulse 90 rested well the night before but complained of some stiffness in the jaws at times and other symptoms seemed to indicate a recurrence of the attack, she was given, therefore, the last third of the bottle of antitetanic serum, the symptoms gradually disappeared and she made a complete recovery and today shows no evidence of the attack

Remarks 1 The serum treatment offers the best chance for life in cases of tetanus, it should not be relied on entirely, however, but other remedies should be used when indicated 2 The treatment should be used early, preferably as a prophylactic, and the dose should be repeated as soon as any unfavorable symptoms appear 3 The antitetanic serum should be of the best quality, injected with an antitoxin syringe and under antiseptic precautions

Yours fraternally,
Matthew M Smith, M D

The Bill was Disallowed

Chicago, Ill., July 20, 1898

To the Editor —I wish to call your attention to two cases which will be of interest to the medical profession

On March 25 I appeared before Judge Kohlsaat with a bill for $25 for professional services against the estate of Byron A Baldwin My bill was for administering an anesthetic and assisting at an operation The surgeon's bill, presented at the same time, was allowed after being cut down My bill was taken up immediately afterward, when the judge delivered himself, in substance, as follows Haven't I just allowed one doctor's bill against this estate? When one doctor is paid, they are all paid, I can't have half a dozen doctors coming here making claims against this estate If you are entitled to anything you must look to the other doctor for it The bill is not allowed

The following is from the Chicago *Record* of July 12, 1898 "Wine Bills Ordered Paid —The club dues and wine bills of John Borden Ketcham, over whose estate there was much litigation after his death last fall, were ordered paid by Judge Kohlsaat yesterday Among the claimants who appeared with unsatisfied bills were the Washington Park Club, $31, the Chicago Club, $53, the Gardiner Commission Company, $178, and the Bodega Wine Company, $25 "

From this, one is justified in inferring that the judge thinks it scarcely necessary that doctor bills should be paid, or that a man is not entitled to the services of more than one doctor at a time, and that wine bills are sacred, and that a man may patronize as many liquor dealers as he chooses If the judge's ruling in this case is in accordance with the law, it behooves doctors to collect in advance for all consultations and for surgical operations, where more than one doctor is always required But then the judge's office boy knows that this is not law, but caprice

Yours truly, D H Galloway, M D
200 Oakwood Boulevard

Inebriates in the Army

Hartford Conn July 20, 1898

To the Editor —I have received two very urgent letters for my opinion on what is asserted to be facts in relation to the appointment of several persons to very responsible positions in the army It is said that these persons are moderate and periodic drinkers of spirits, who are frequently intoxicated, and I am requested to write an opinion of such persons and their disabilities for such service I can not say anything of the individual cases mentioned, but the same business principles should prevail here as in civil life The moderate or periodic drinker is not considered a safe man in positions of responsibility, no matter what his capacity may be otherwise In the early days of the Civil War, a number of inebriates were in responsible positions on both sides, and some way sad disaster followed their bad judgment In those days the delusion prevailed that alcohol was a real stimulant and tonic, and in times of great strain a valuable help Some most bitter experiences disproved this, and the last years of the struggle found nearly all the leading officers in command total abstainers, at least those in active duty on the battle field The moderate drinkers, and men drank to give them force and strength for great emergencies disappeared They were put aside as dangerous men to depend upon The facts are established beyond question, that no brain worker can use alcohol to advantage in times of excitement and mental strain, and no inebriate is competent for emergencies of any kind These facts are the result of constantly increasing experience in business circles, and their recognition is more and more prominent in every field of activity An inebriate officer in the army is a very dangerous man, more so than an inebriate engineer on an express train Talent and capacity is of little value compared with a clear brain and steady nerve While it is possible that inebriates may secure responsible places in the army, it is almost absolutely certain that their disability will be recognized, and in times of great peril they will be found in subordinate places A very capable officer was suddenly detached from active duty in the Civil War and placed in an unimportant position He died with the impression that it was the jealousy of the commander that put him aside at this time, and wrote bitterly of this and other events In reality he was an inebriate, who a short time before this event was widely delirious on the battle field His superior officer was afraid to trust him, and the real reason was never mentioned Service on the field and in the camp always sifts out the strong, capable men, and no officer can hope for promotion or eminence, who depends on alcohol for aid in the hour of trial There was in all probability no better army than the one dissolved in 1865 at the close of the Civil War The army of today is commanded very largely by the veterans of 1865, and it is safe to say that few, if any, alcoholic incapables will ever occupy responsible situations, at least very long Such men may be in the service, but their incapacity will certainly find them out

T D Crothers, M D

Human Serum in Yellow Fever

Atlanta, Ga

To the Editor —During the Yellow fever epidemic of 1897, while regretting that Sanarelli had not been able to put out his serum for the treatment of this disease, the thought occurred to me that the blood of a person having had the disease should answer all the purposes as well as the serum prepared by the tedious process through animals It would be a simple matter to take blood from the vein of an immune, preferably one recently recovered from the disease, and immediately inject it into the patient affected or one to be protected It would certainly be as safe as to use serum prepared through animals, which is bottled and kept some time before using, and I believe, would be fully as effective

I made this suggestion to the Boards of Health of New Orleans, Mobile and Montgomery, but it was late in the epidemic and if it was tried I have not heard of it A few days ago I wrote to Surgeon General Sternberg suggesting that it be tried among our soldiers now exposed to such great danger from yellow fever in Cuba

The success attained in the serum treatment of diphtheria certainly warrants hope for like results in other microbic diseases, and the method here suggested is applicable to them all

C C Stockard, M D

Precocious Pregnancy

Philadelphia, July 19, 1898

To the Editor —In reference to your article of July 2, 1898, page 42, I recall a case in 1867 (of which I have notes) of the delivery of a girl ten days before she was twelve years of age The confinement was normal, but was followed by a phlegmasia alba dolens in both legs She had been brought up in a house of prostitution, and at the age of eight years had commenced cohabitation with boys She menstruated at ten, and at the time of delivery, pelvis, mammæ and pubic hair were well developed

I was able afterward to confirm her statement Her subsequent course was somewhat peculiar After ten years of the most vicious profligacy she married a staid, quiet farmer, settled down to a life of intensely hard work, and after a number of syphilitic abortions, was so far cured that she raised a family of several children Very truly yours,

De F W

Malaria Is Not a Disease

New York, July 25, 1898

To the Editor —I note that in your items for your issue of the 16th inst Dr Koch is represented as speaking of "tropical malaria" as if the cause and effect were the same That is to say, if my view is correct, malaria is a "bad air" or other bad influence that begets a certain disease, namely, malarial fever I would like to ask you to turn to Dr Koch's own writing in the *Deutsche Med Woch* , June 16, and tell your readers if he has fallen into the error of lumping cause and effect, or whether the *lapsus* has occurred in the course of transcribing his valuable observations into the English By giving your readers a little light on this subject, you will, no doubt, confer a favor on others beside

Yours faithfully, Zeta

Appendicitis

Richmond, Ind

To the Editor —I am quite disposed to favor the writer of the article on "Appendicitis" in the Journal of May 14, as I am perhaps the cause of several articles which have appeared in the Journal Dr Carstens has made the *amende honorable* in the same propositions, which I quote from his second article in the Journal of February 19 Apropos, the London medical men are and have been laughing over the question of "*What is Fame?*" which was brought out by the indifferent regard to such names as Treves and Talamon, when such names are quoted with much gusto, as Price, Deaver, Murphy, Fowler, Morris and others The last mentioned, as if aching for a controversy, thrust in his lance of the quill, hoping somebody would recognize him as the New York gladiator on this important topic

First then to Dr Carstens' propositions, viz 1 "He (Dr Haughton) and I agree that a diagnosis should first be made" 2 "He (Dr H) and I agree that a convalescent patient should not be operated upon" 3 "He (Dr H) and I agree that patients absolutely recover without recurrence and without an operation" 4 "He and I agree that some patients need an operation, and if there is any difference in our views, it is simply when is the best time" So he says, "finally, after all, we are near together, there is no use in splitting hairs about it, and I am perfectly convinced that Dr H is a good fellow who means well and, what is more, is progressive and wants the truth" This is making the *amende* (?) all right as I took his first article This is what I expected the New York man would do, and so I have waited for him to define and commit himself, which he has quite fully done in the article, which I am about to review I do not know Dr Morris, but I shall attempt to pay my respects to him also in this squib, which would never have been written if he had not openly thrust in his lance in the Carstens' episode I quite fully recognize the animus of New York surgeons toward western surgeons, and if any man will read his last article in the Journal, and do it carefully and dispassionately he will come to the conclusion that he is arbitrary and dictatorial in tone in the assumption which is here quoted from the editorial of the *Texas Med News* "We feel that we are guilty of no exaggeration when we assert that such men, viz , men occupying extreme positions in every profession, and especially so in medicine and surgery" I am glad he put that in, as I may have occasion to use it before I am done These men he refers to as occupying extreme positions, are dangerous elements in the medical profession, a menace to the well being of society The editor of the *Texas Med News* is personating Dr Morris, and goes further in saying that *such extreme radical* teaching by influential members of the profession, such as Dr Morris, "is well calculated to do great injury " We quite agree with the Texas editor, and I am glad he comes to the front like a man and declares his convictions. Dr Morris hence classifies himself in the category as radical, as distinguished from conservative I had always believed that the truth is usually found midway between two extremes, and in this case I am betwixt and between I am conservative when best and radical when best, and Dr Morris can not do my thinking nor indicate in my cases what ought to be done I fear it is too much the tendency of the younger surgical profession in the East to think for the entire profession It ought to be remembered that some of us who live West, where broad prairies bound our vision and large rivers roll carrying our trade, and white-winged ocean birds of commerce infuse powers and dignity and "no pent-up Utica bounds *our* powers " It ought to be remembered also that some of us in the West sat upon seats of medical colleges in eastern cities and received instruction from the honored names who instructed the same men who now are at the front in surgery It ought to be remembered also that some of the illustrious names who have been called to eastern schools and have aided the development of surgery, were men gathered from western fields Sims, Gross and Parvin and others, have gone East to medical centers, and we have heard their teachings, and if this idea prevails in any large degree let it be understood that we upon western soil are *men* of large mould, and our institutions are developing them, the peers of any age or class

I have nothing to say for myself except that having spent fifty years in college, hospital and general surgical work, and having taught surgery for fifteen years, I do not permit them to be more careful in diagnosis or in operative methods, and always reserve the right to adjudicate the situation if I am to be the operator This is just what Dr Morris does, only he is too radical, and all the knowledge of this question will not die with him

I desire that these men, who are in positions to teach, should remember that he teaches best who teaches facts which can be utilized in the future One fact is worth a thousand theories, and one life saved by any process which is best is a fact worth more to patients than all the theories of ages So we go for the facts We ask, is it so? Can you prove it? Besides, if you do or can, it is more convincing than to abuse men who dare to think, investigate and logically work out conclusions, and then go to the bedside and demonstrate them. I do not believe more than half I see, and very little of what I hear I am more fully occupied with what I think along surgical and medical lines

Appendicitis proper Its medical and surgical relations —I desire to notify all that I did not desire or intend to be drawn into any controversy, and made no attack upon anybody, but I am not disposed to be dictated to as to what I shall do or think in this disease I am in favor of a correct diagnosis, which I think but very few men can make differentially, and also in favor of a definite pathology of its progressive stages, as already well defined by writers, and whatever else may or can be known of the disease before we have determined to at once cut into and dissect out or remove what has always belonged to him, unless we assume that man was originated from a gorilla in the upward scale, and did not have an appendix at first

"*Extreme Positions* " Dr Morris says "it makes a difference whether an extreme position is based upon knowledge or theory The subject of appendicitis is so thoroughly understood by a *part* of the profession, and data so well classified, that we can now maintain the *extreme* position that operation should be done as soon as diagnosis is made "

Readers here will please notice that only a *part* of the profession (which part we are left to infer) is the New York portion of it, and the rest know nothing about it Again, he admits his position is an *extreme* one and a *radical* one, and in view of all that is known to us in the West, where we see it perhaps as often as elsewhere, we are modest enough to say that the Doctor has mistaken his audience, if he supposes that men believe that all the facts of this disease lie in the immediate environment of the writer, who has assumed to say what must be done in any given case I presume it will be admitted that on the first attack of pain, it can not be said This is a case and operation must be made or the patient will die This is a bold barefaced assumption, because my own considerable experience contradicts it. He cites diphtheria, etc., as infection, and reaches the other conclusion that the appendix is infected and must be removed to prevent further infection We will take peritonitis It may be simple or infecting Does Dr Morris, or any other man, open the abdomen, on diagnosis, to remove the infecting cause Nay, he can not, he does not know what is the cause, and yet these cases where my own judgment would say to open the abdomen and disinfect it, as giving the best chances for life, are not so fully accepted by the cautious, honest surgeon, who values a human life more than he does his reputation or applause of men Dr Morris writes and talks like a man who did not intend to admit that there was but one side, that all other men were color blind and he alone could see the *white* light. He talks as if the question had been already adjudicated and settled and he was the judge upon the bench to deliver the opinion, whereas he ought to remember that the profession of the United States and the world is but the great intelligent jury, who are determining the facts and evidence, and the time has not come for the judge to deliver his opinion to the jury He says himself he is making an effort to gather up the statistics (that is, facts), and if so the evidence is not all in, nor the case closed I quote a few lines from another (western man) of the medical profession, who says "It is our opinion that operative surgery has been carried to an alarming extent, formidable operations involving the *lives of patients* have been performed upon the most trivial pretext or excuse It is of daily occurrence to hear of women being submitted to operations, dangerous in themselves, for ailments that have been successfully relieved in the past by medication, and perhaps not one in ten, who may happen to survive the operation, are cured, and often are miserable sufferers the balance of life, while those who have succumbed and gone out of life are legion " He says further (American surgeons hear this arraignment of your surgery) "I do not hesitate to say, without fear of *successful contradiction*, that if the statistics were carefully procured the number of deaths from the effects of modern surgery, in the past ten years, will outnumber the deaths in both American armies during the late rebellion " I do not suppose it is so large (it may be) if we but reflect that in every city and town, and possibly at every cross roads, there is one or more surgeons who supposes "he carries his star in his brain," and is prepared, as he thinks, to diagnose and operate on any case presented to him, and like Dr Morris, is making cases for *statistics* and record

"*Conservatism*," "*philologists*," "*radicals* "—If we look over this ground the Doctor has seen fit to broach, we find only the same original idea of the man who imagines he is the old schoolmaster, or pedagogue, and imbued with the idea of hammering into his pupils his one idea "I am the master of this small confederacy and you are subjects," viz , pupils. It is but a trite saying that such an idea is but a simple monarchy, which form of government becomes dissipated into thin air when pupils grow up, as it is now in Cuba; while Spain refuses to be convinced. What does he want to invoke the aid of philologists for in this question , because somebody used a word in Webster's Unabridged which is well understood, where men are versed in the use of words to express ideas, and there is no necessity to call the attention of philologists to the use made of it There is a degree of reckless surgery in many directions which is noticeable and we call a halt on this line, to say that the principles of pathology have been guiding us in determining our conditions along these lines, and "that every case should be operated upon as soon as diagnosis is made" is, to my mind, to ignore vital force and all other conditions having relation thereto, is a principle of surgical practice I have never subscribed to, and I am guided by the best pathologists of the past ages as to what inflammation is in its essential character, as well as its results upon the tissues involved I know these things as well, I presume, as Dr Morris, but I claim the right to do my own thinking in my own way, guided as I always am by the signals of our science and art, as well as by the principles of a conservative regard for human life and suffering I know he claims the results of statistics to prove that under "proper surgical treatment" at the proper time, has been shown to be less than 1 per cent in the hands of several American surgeons, that is, less than one death in one hundred cases He claims this is proved I do not accept it, because if the cases who do not recover after operation relief, are also given, we shall have a standard by which to judge of the results of operation Figures on paper look well, but we want something more, as we have been in a number of large hospitals for six month periods and know something of the history of methods

The unkindest cut of all by the writer under review is this, viz "That *conservatism* takes the place of knowledge" (We deny it.) That a large part of the profession is uninformed upon the subject of appendicitis, and the further suggestion that the profession is uninformed (that is, ignorant, to put it broadly) because it can not have learned "the unwieldly sum total of our advanced medical knowledge" Now, it is clear to every well balanced mind, on reading Dr Morris's article, that he is in a state of mind Just what that is would require possibly a *lunatico inquirendo* into the mental question, before giving any value to such statements regarding the general medical profession of this country

"Members of the profession to use their own judgment about the propriety of operation" If not, who shall decide? When doctors differ who shall decide? Now again "Shall we let members of the profession all use their own judgment, or shall we ask the men who are thoroughly familiar with the subject to teach principles and make rules for aiding those whose opportunities for gaining accurate information have been more limited" Look at the presumption and the assumption of such a proposition to the American profession When in every important city and town, and those also less so, there are hospitals and sanitariums as thoroughly equipped with men and modern means as even those of New York City, and men of much better balanced minds than the author of the paper under review, who are just as capable of investigation with the microscope and tests, and the knife, as our writer, hence it is downright presumption and ignorance of the facts of the qualification of the American surgeon, to have written such a diatribe against them The writer from New York had better get out and come West and mingle with the profession more fully and freely in their State and county, and perhaps also the National conventions, and then go with them to the hospital fields of labor, and also to the private bedside of a large and very intelligent and educated clientèle, and he will begin to conclude he does not know it all and that possibly among all of these he may gather up some new facts about *bacteria* and results upon tissues, or the methods of performing successful operations upon his patients It certainly is not probable or possible that all the knowledge of this subject, which has called out so much discussion and airing of surgical opinion, is found with Dr Morris, and he at least ought to have learned so much as this, that an attempt to belittle the knowledge of his confrères in the general profession is a calumny which deserves to be widely resented, and the other spirit of generous confidence and yet independent and cautious statement in all medical investigation should be recognized as the inalienable right of him who devotes himself to the good of others and advancement of the profession to which "I (Dr Morris) have sworn allegiance" I, not more than others, my dear sir, who have spent a lifetime in learning "what is truth," am still, with others, asking the same question But Dr Morris has not answered it upon this question, as is already well understood We are open to the truth and say nothing about the *ipse dixit*, but we know and see the truth, when not offensively paraded before us, that in me lies the truth, all the truth of this question Other men have some experience along this line, and as all truth is a unit it might be just as well if it was not projected so forcibly that, like a cannon ball, it overcomes all our sense of appreciation This is but suggestive, however, to the Doctor, as it seems to me and I think will readily appear to others, that he himself is "intoxicated" with the "spirit of controversy," which he charges upon another And in winding up his article he says "Call it intolerance if you will, but I have no motive excepting that of being useful to the profession to which I have sworn allegiance" So be it, yet I trust in future he will stand behind the utterances (if for truth) and the "truth shall make men free," if they shall perceive it, more than the man We shall rest just here and say, come on with your facts, your statistics, your experiences, if you have any, and let us compare notes and let there be an end of all this, which from the first was sought to be avoided, but was drawn out finally by references and statements, which indicated that the writer was either "intoxicated" with his "spirit of controversy," or he had set himself the ignoble task of illuminating the benighted and ignorant profession, as it had not yet learned the density of the ignorance which had covered the professional mind upon this most important question, which has come down to the few years of this closing nineteenth century, to receive the flash light of transparent truth in the *ipse dixit* We will receive the truth, though it blind us

R. E Haughton, M.D

(*Finis*)

NEW INSTRUMENTS

EUREKA HOT-WATER VAGINAL APPLICATOR

By S L West, M D,

Philadelphia Pa

My apology for presenting a new hot-water vaginal applicator to the medical profession is that so far no approved method of applying hot water internally to the female pelvic organs is at our command, and the great necessity for prompt relief of the many minor ills arising from perverted and suppressed functions of those organs demands some commendable appliance The hot water douche is only an apology for a better method of accomplishing the great demand for local treatment of those organs To say the least, it is attended with discomfort and fatigue to the patient, and, as used by the majority of patients, its benefits are questionable

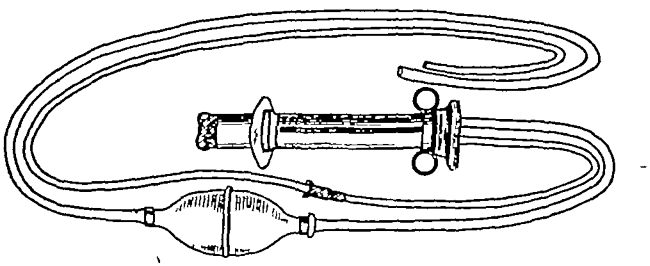

Figure 1

The merits of the "Eureka Hot-Water Vaginal Applicator," which is here illustrated, at once commend it to the attention and approval of the medical profession Its application may be briefly stated as follows Freely soap the rubber bag (never use vaselins nor oils) and return or replace it within its holder, and open the cut off on discharge of the rubber tube, place a pitcher of hot water, the hotter the better, conveniently near the side of the couch or bed, and drop the ends of the rubber tubes of the applicator into the pitcher, the patient reclines upon a couch or bed, on her back, with legs drawn up and knees abducted, and taking the applicator in either hand to suit her convenience, introduces the vaginal end of the applicator into the vaginal orifice, passing it up until the flange of the applicator comes in contact with the labia, then placing the index and middle fingers of the other hand in the rings on the piston, she presses the rubber bag as high up into the vagina as can be comfortably borne, as shown by cut No 2, holding the applicator in this position, and taking the rubber bulb on the feed tube in the other hand, she grips it two or three times, allowing the water to pass up through the rubber bag and flow out through the discharge tube This removes the air from the rubber bag Now close the cut-off and continue to pump water into the rubber bag The amount of water required to be pumped into the rubber bag is determined by the discomfort produced by distension of the pelvic viscera, as shown in cut No 3 As the parts become tolerant of the pressure, pump in more water If it be desirable to continue the operation for fifteen minutes or half an hour, especially in chronic pelvic cellulitis attended with exudates, it will be well to empty and refill the vaginal bag, without removal, several times during the operation, thus producing the highest order of massage

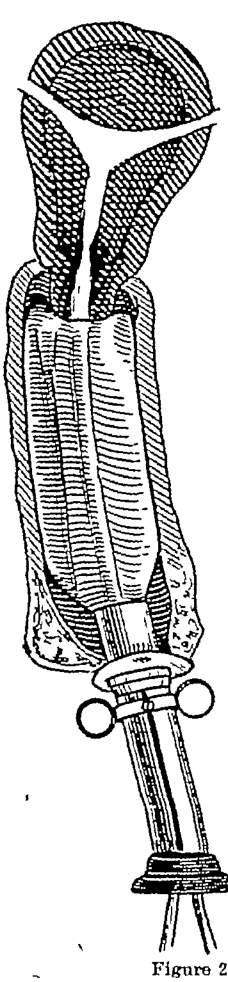

Figure 2

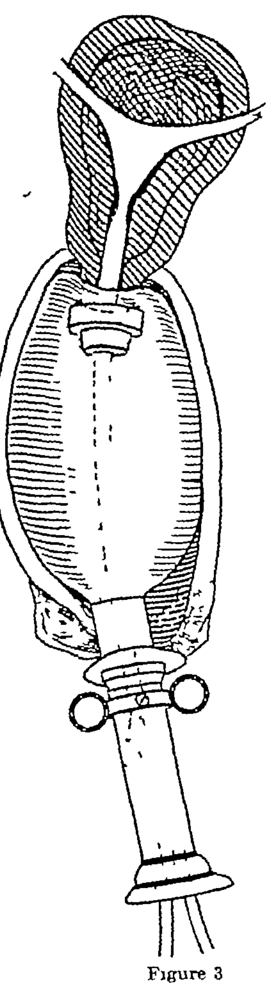

Figure 3

After a varied experience in the use of the "Eureka Hot Water Vaginal Applicator," covering a period of several months, I respectfully beg to refer especially to the following In dysmenorrhea it gives prompt and immediate relief, relaxing the tissues and thereby promoting the menstrual flow In climatic and neuralgic pains of the pelvic organs and viscera, it has no equal in promptly relieving the pain In pelvic distress, heavy weight and bearing down pains, the results of long standing or fatiguing walks, it acts like magic, restores the parts to a normal position and rapidly promotes absorption of the local congestion In chronic pelvic cellulitis with inflammatory exudates and adhesions, it, under the relaxing influence of the hot water and expansion or equal tension of the tissues, most effectually breaks up the adhesions and rapidly promotes the absorption of the exudates

BOOK NOTICES

Scientific Memoirs by Medical Officers of the Army of India Edited by Surgeon Major General J Cleghorn, M D, C S I, Director General of the Indian Medical Service and published from the office of the Superintendent of Government Printing Calcutta

This work has just reached this country It is a small quarto of 130 pages beautifully illustrated with chromolithographed plates It contains five papers, the first "On Choleraic and Other Commas," by Surgeon Lieutenant-Colonel D D Cunningham, in which he gives interesting articles under sub headings as A description of some new species of commas occurring in association with cholera in Calcutta, comma bacilli occurring in bodies of water apart from the existence of any cholera in the vicinity, etc Under the heading, "On the relation of bibrionic organisms to cholera" he states that the continued study of the bacteriology of cholera in Calcutta has in no way caused him to modify the views which he has on several previous occasions expressed in regard to the absurdity of talking of "the cholera bacillus" The longer the question is investigated in the endemic area of the disease, as represented by Calcutta, more and more evidence accumulates to show that the choleraic condition is not necessarily associated with the presence or predominance of any one species of vibrio within the intestinal tract, and that any assumption that such an association necessarily exists is merely founded on the fact that Professor Koch when in Calcutta, was either profoundly ignorant of bibrionic schizomycetes as a group, or that owing to his brief and limited local experience in the locality, he accidentally encountered only a single species in connection with the few cases of cholera which he had the opportunity of investigating At the same time it must be allowed that he was the first observer who drew attention to the undoubted fact that a very special relation does exist between the occurrence of the disease and the predominance of the vibrionic schizomycetes within the digestive tract, for although a certain number of exceptional cases do occur in which the choleraic condition exists apart from the presence of any abnormal predominance of intestinal vibriones, there can be no question whatever that an association of the disease with such predominance is normal The author concludes by insisting on certain facts 1 Artificial administration of comma bacilla very rarely serves to induce cholera 2 Commas may be present in the intestinal contents of those to whom they have been administered without any evidence of the establishment of the choleraic condition 3 Cholera may be present apart from any evidence of commas in the intestinal tract, and the numbers of vibrios and severity of the case do not necessarily run parallel 4. The administration of different species of commas may be followed by the development of the choleraic state 5 The physiologic properties of commas and other schizomycetes may unequivocally vary very greatly under different circumstances, and consequently the nature of the products to which they give rise in the substratum must also vary greatly The second paper consists of notes on the malarial parasite as observed in the blood during life, and in the tissues postmortem at Lahore, Punjaub, by Surgeon Captain J Murray He presents fine plates showing stages in the development of the quartan parasite, the tertian parasite, the quotidian parasite and those of malignant remittents He cites many European observers but does not appear to be aware that any work of this kind has been done at the Johns Hopkins University Then follows a paper in which Surgeon Captain Leonard Rogers presents some observations and statistics to show that the incidence of malarial fevers is proportioned to the height and fluctuations of the ground water bed level The last two are by Dr Cunningham one on the results of experiments on the action of various reputed antidotes to snake venom, conducted during the season 1895-96, the other on certain fungal and algal diseases affecting economic plants in India The most important of the conclusions reached by Dr Cunningham's experiments were 1. The serum of the blood of animals which have been artificially immunized to the action of lethal doses of snake venoms by means of habitual and cumulative treatment with the latter, unequivocally possesses antidotal properties, and hence may fairly be denominated antivenene 2. The term antivenene is, however, of generic, not specific value, for the antidotal material contained in the blood of animals which have been artificially immunized against colubrine venom is inert against viperine venom and *vice versa.*

Diseases of the Eye By EDWARD NETTLESHIP, F R.C S, Ophthalmic Surgeon at St Thomas' Hospital, London, Surgeon to the royal London (Morefields) Ophthalmic Hospital Revised and edited by W T HOLMES SPICER, M D, M A, F R C S, Ophthalmic Surgeon to the Metropolitan Hospital and to the Victoria Hospital for Children Fifth American from the Sixth English Edition With a supplement on color blindness by WILLIAM THOMPSON, M.D, Emeritus Professor of Ophthalmology in the Jefferson Medical College of Philadelphia With two colored plates and 161 engravings Philadelphia and New York Lea Brothers & Co 1897

A book which has passed through five editions needs no special recommendation It is sufficient to say the present edition is fully up to date It is unquestionably the best compendium on diseases of the eye ever written in the English language and, therefore, justly recommended in many medical colleges, for recitation work.

The supplement by Dr William Thomson, on the practical examination of railroad employes for color blindness, gives the work an additional value to physicians engaged in railroad service, as there is no one who who can speak more authoritatively on this subject or who has more practical experience in this work than the venerable emeritus professor of ophthalmology in the Jefferson Medical College

Annual and Analytical Cyclopedia of Practical Medicine By CHARLES E DE M SAJOUS M D, and 100 Associated Editors, assisted by Corresponding Editors, collaborators and correspondents Illustrated with chromo lithographs engraving and maps Vol I Philadelphia, New York and Chicago, The F A Davis Company, publishers 1898 Price, cloth $5 00

After ten years publication of the *Annual of the Universal Medical Sciences* in a series of five volumes every year, the plan has been changed so that hereafter one volume appears every six months and the whole alphabet will be covered in three years. Every three years therefore the subscribers will have a six volume reference system which will cover the most that is valuable in the medical literature of the period The volume before us is very handsome, attractively presented and is arranged alphabetically The illustrations are fine, the paper and type are excellent.

We think in its present arrangement the "Annual" will be found more useful than heretofore because of its alphabetic arrangement.

A System of Medicine by Many Writers Edited by THOMAS CLIFFORD ALLBUTT Vol vi. Pp 1058 New York The MacMillan Company, 1898 [From A C McClurg & Company Chicago] Price $5 00

This volume is devoted to diseases of the respiratory organs in which are articles by Dr Wm Ewart, Dr P H Pye-Smith, Dr Percy Kidd, Dr J T Arlidge, Dr Rolleston, Dr Kingston Fowler and Dr James F Goodheart, Diseases of the pleura by Dr Samuel West, Dr Gee, Dr Herringham and Dr D W Finley, diseases of the circulatory system by Professor Michael Foster, Dr Monckton Copeman, Prof Sherrington, Prof Allbutt, Dr Sidney Coupland, Dr Samuel West, Dr Wickham Legg, Dr John Thomson, Dr Stephen Mackenzie, Mr W Johnson Smith, Dr Cheadle, Dr Robert Muir, Dr Dickinson, Dr Laurence Humphry, Dr F T Roberts, Dr Thomas Oliver, Prof Dreschfeld, Sir R. Dougles Powell and Dr Ernest Samson

There is a story in the author's preface which has a direct interest for American readers He says "An article by Prof Welch on 'thrombosis and embolism' was to have been in my hands in ample time for the publication of this volume last Christmas Unhappily before the completion of his task Prof Welch found himself committed to a desperate fight for the freedom of physiological research in the United States As President of the Congress of American Physicians and Surgeons the duty fell upon him of organizing the profession in opposition to a bill now before Congress charged with restrictions so vexatious that all enlightened medical and scientific men in America consider that its enactment would be nothing less than a calamity In addition to his laboratory and lecturing work Dr Welch had to write innumerable letters prepare papers and documents, organize committees, visit Washington repeatedly, have interviews with senators He is unkind enough to add that all this trouble came from England where if your scientific men had made any sort of courageous stand twenty years ago I should not have been sacrificing my time and energies in this way I am disposed to think that the trouble that I have caused you is a judgment for the delinquencies of your countrymen in this matter Such are the uncertainties in the course of political business, that although Prof Welch expected every week that the matter would come to a vote and thus liberate him to fulfill his obligations to me, yet week after week he has been disappointed and compelled to keep up agitation and organization Even yet the fate of the bill is not sealed Had Prof Welch foreseen this grievous delay he would have withdrawn from his engagement in time for me to place the article in the hands of another contributor This story I have ventured to tell at some length because it contains an interest and perhaps a warning for us all"

It will perhaps interest Prof Allbutt to know that at adjournment of Congress the Anti Vivisection bill remained unadjusted, but it is not believed that it can now pass either house of Congress Nevertheless the profession in this country will take advantage of the summer vacation and personal contact with members of Congress and the Senators, to inform them of the consequences of this most ill advised measure

The work under consideration represents the present state of British medicine as set forth by some of its ablest exponents

Hay Fever and Its Successful Treatment. By W C HOLLOPETER, A M, M.D Pp 137 Philadelphia P Blakiston Sons & Company, 1898 Price, $1 00

The author says "Having had remarkable and uniform success with the simple treatment of hay fever for the last ten years, during which time I have given complete relief to over 200 patients in my private practice, and having made a thorough clinical study of this affection, as well as an exhaustive review of the literature relating to it, I feel justified in presenting the results of my labors in this short treatise"

The treatment advocated by the author is strict sterilization of nasopharynx—daily sterilization Surgical treatment is indicated, according to the author, only when gross lesions exist. In old cases the treatment should commence two or three weeks before the anticipated recurrence of the paroxysms

The author has conferred a benefit on the profession in making his views public for whether others sustain in actual practice the therapeutics here recommended or not, careful cleansing of the nasal passage must result in good, and many patients be relieved from the cruel and heroic measures so frequently recommended

A copious bibliography concludes the book

Schenk s Theory The Determination of Sex By Dr LEOPOLD SCHENK Authorized Translation Pp 222. The Werner Company Chicago, Akron Ohio, and New York, 1898

The lay press has extolled this book to an extent that renders it unnecessary for a medical journal to say much The amount of sugar in the system, according to the author, determines the sex of progeny For example, a woman with diabetes is nearly certain to have female children And in all cases in which there is a predominance of female offspring the Trommer test shows the presence of sugar The natural sweetness of the female sex is thus biologically accounted for The question of diet is therefore the controlling factor under the Schenk theory When male offspring are desired the diet should be on antidiabetic lines

PUBLIC HEALTH

Health in Chicago —The report of the Department of Health for June gives 1581 deaths for the month, a rate of 0 98 per 1000 as compared with 1 per 1000 for June 1897 and 1 17 for June 1896 Of these deaths, 296 were of persons under one year old and 181 between 1 and 5 years The principal causes were Diseases of the nervous system, 224, consumption, 218, pneumonia, 142, diseases of the heart, 101, acute intestinal diseases, 88, cancer, 73, bronchitis, 47, typhoid fever, 35, diphtheria and membranous croup, 30

Death rate in Diphtheria —Prosessor Kassowitz of Vienna denounces antitoxin, stating that the published percentages are misleading and that the actual mortality from diphtheria has not diminished in recent years as claimed He cited statistics from Moscow, London, New York, etc., which prove that the number of deaths has not decreased, whatever the percentages may show, while statistics everywhere prove that tracheotomy, primary or secondary (after intubation), is still followed by death in 70 to 90 per cent., that the number of cases of consecutive paralysis (heart death) has actually increased, and that renal complications are not affected by the antitoxin, while croup continues its course unchecked by the injections He even refuses to consider the Klebs Loeffler bacillus the specific cause of diphtheria, which he says is yet to be discovered In the cities (Vienna, Paris) in which the mortality is actually lower of recent years, the disease has been of a milder type

NECROLOGY.

Edward Hamilton Kidder, M.D , Fall River, Mass , died July 16, 1898, after an illness of some two or three months Dr Kidder was 32 years of age and a native of Lincoln, Mass. He attended Harvard University, graduating in the class of '88 After a year of teaching he went abroad for study and observation in hospital work. On his return he studied medicine, graduating from the Harvard Medical School in the class of '93 He was given an appointment as house surgeon at the Massachusetts General Hospital, serving nineteen months He was especially devoted to the study and practice of surgery and was notably successful in his hospital practice in this work. He came to Fall River in 1894 and was a leading spirit in the organization of the Emergency Hospital and the Training School connected with it, and the success of these institutions has been largely due to his enthusiastic and energetic support. In the death of Dr Kidder the profession and the city of Fall River alike suffer a distinct and appreciable loss He was a man of unusually fine spirit, unsaving of himself in the work he had to do His early end was in part the result of over work Dr Kidder was a member of the Massachusetts Medical Society, the Fall River Medical Society and the Harvard Medical Alumni Association

Alan Penneman Smith, M D , died July 18, at his home in Baltimore, M.D , in which city he was born in 1840 He was a son of Dr Nathan Ryno Smith, a graduate of Princeton, and in 1861 of the University of Maryland, Medical Department. As one of the trustees of the Johns Hopkins University and as a member of many societies he was widely known despite his modest and unobtrusive ways Early in his career he was in high repute as a lithotomist Six children survive him, one of whom is a physician He had many friends in the profession and out of it.

John Hewitt Wilson, M D , Glasgow, Scotland, 1844, of New York city, was found dead in his room July 15 Cardiac disease is given as the cause of death He was born in Auchnacloy county, Tyrone, Ireland, in 1818, and came to America in the year after his graduation Two daughters are his survivors

R O Moffat, M D , a young physician of Toronto, Canada, died in a dentist's chair from the effects of chloroform, July 18

James T Ball, M D , Colorado City, Colo , died near Judson, Ind , July 15, aged 39 years ——F H Bodenius, M D , University of Heidelberg, Germany, 1869, of Madison Wis , died at Baltimore, Md , July 21, aged 53 years ——Jacob Boon, M D , Glen Olden, Pa , July 17, aged 61 years ——Frederick W Vogel, M D , Boston, University of Halle, Germany, 1868, died July 16, aged 52 years ——Henry E Werner, M D , Rush Medical 1888, died at his home, Le Claire, Iowa, July 16

Deaths Abroad —F Cohn, professor of botany at Breslau, whose name will be remembered with those of Nägeli, Pasteur and Koch, as one of the founders of bacteriology ——Dr Levieux, formerly physician to the Bordeaux Hospitals, corresponding member of the Académie de Médicine, aged 80 years ——Dr Anton R Kerner von Marilaun, professor of botany in the University of Vienna, aged 66 years

SOCIETY NEWS

Medical Temperance Association —This Association, organized at the Washington meeting of the American Medical Association in 1891, has attracted a good deal of attention lately Its particular object is the special medical study of alcohol as a medicine and beverage Its members are almost all members of the American Medical Association, and the annual meeting is held at the same place and time as that of the Association For several years it has held a summer meeting at Staten Island, in July, which has been largely attended by philanthropists and temperance reformers as well as medical men The particular object of these meetings has been to group and collate a mass of testimony which has been both exaggerated and minimized by physicians and temperance advocates, and to point out the real facts and the lines of investigation now being pursued These meetings have followed National gatherings of reformers and been very influential in many ways The meeting this year, July 5 and 6, followed a temperance congress of four days' length, closing the day before the medical convention began The papers presented were purely scientific, but were listened to with much interest by a large mixed audience Both the papers and discussions were temperate in tone and very reasonable suggestive presentations of facts and conclusions Meetings of this character exercise a strong influence and are of great value to both the profession and the laity, correcting popular errors and rousing up new interest in a subject of increasing importance in every circle of society Both the English and French societies have quarterly meetings, in which leading temperance men take part. Here the meetings are restricted to medical men The medical side of the temperance question is a very large and almost unknown field, and increasing interest will follow the work of this society in the future

The French Congress of Surgery will meet at Paris, October 17 to 22, with Professor Le Dentu in the chair Nephrotomy will be the subject of addresses by Guyon and Albarran, and the "Treatment of Goiter" (exclusive of cancerous and exophthalmic goiter), by Reverdin of C[illegible] For f[illegible] lars address Lucien Picqué, [illegible] Paris

Mississippi Valley Medical Association — The twenty fourth annual meeting of this association will be held at Nashville, Tenn., October 11-14, under the presidency of Dr John Young Brown of St Louis, Mo The annual addresses will be made by Dr Jas T Whittaker of Cincinnati, on medicine, and by Dr Geo Ben Johnson of Richmond, Va , on surgery Titles of papers should be sent to the secretary, Dr Henry E Tuley, 111 West Kentucky Street, Louisville, Ky , as early as possible Reduced rates on all railroads will be granted on the certificate plan

Cumberland County Medical Society—A meeting of the Cumberland County Medical Society was held at Hotel Cumberland, Bridgeton, N J , July 12, and was presided over by Vice President Dr J B Ware Dr T G Davis of Bridgeton read a paper on "Nephritis in Children " Dr H W Elmer, as delegate, reported on the AMERICAN MEDICAL ASSOCIATION, and Dr L. L Hand of Leesburgh on the State Medical Society

The French Congress of Gynecology, Obstetrics and Pediatrics will meet at Marseilles, October 8-15 The subjects to be discussed are Extra uterine pregnancies, auto intoxications during pregnancy; congenital hernias, microbian associations in diphtheria, school children's dyspepsia, infantile cardiopathy, the purpura, diplegia and colitis of infancy and paralytic club foot

MISCELLANY

Not a Good Showing —An English inspection reports that out of 8125 children scarcely 40 per cent. have normal vision in both eyes

Chicago Policlinic —This flourishing school has paid off the last of its indebtedness, and the building and grounds now belong to its Faculty without incumbrance

Dr Eugene S Talbot, on account of his original investigations, has been elected honorary member of the Odontological Society of Spain

Formaldehyde Only a Surface Sterilizer —Dr Harrington of the Harvard Medical School, after experiments, concludes that this gas has no penetrating power in the presence of moisture

The Penalty of Philanthropy Remitted —The Russian branch of the Red Cross Society has handsomely recognized by a pension of one thousand rubles, the services of M Henri Durant of Geneva, now in poverty This sum is to be paid annually

Origin of Red Blood Corpuscles —Dr A Pappenheim (*Virchow's Archives*, Band 151), after attaining his best results by fixing with heat at 120 degrees C for five or ten minutes, then dipping five seconds in a concentrated sublimate solution and staining with alum carmin—methyl green, concludes that the red blood corpuscles are derived from the basophile leucocytes

Sleep for Children —(*Pediatrics*, Vol v, No 2, *Am Medico Surgical Bulletin*, July 10, 1898) The approximate period of sleep for children is given as between one and two years, six to eight waking hours, between four and six years, nine to eleven waking hours, between nine and 13 years fourteen to sixteen waking hours Still the comment is that perhaps too much stress is laid upon the harm of over sleeping, particularly in young children

Hysteric vs True Peritonitis —Hopkins, *Colonial Medical Journal*, *Am Medico Surgical Bulletin*, maintains the rarity of the simulation of acute diffused peritonitis on the part of the hysteric. In neuropathic women the localized inflammatory affections are at times closely counterfeited In hysteric peritonitis a slight touch of the skin is more distressing than deep pressure, although in neuropathic patients deep pressure in the hypochondriac region causes intense suffering Pulse and temperature in simulated peritonitis are usually about normal, while vomiting is often present, but never nausea Besides, the vomiting does not become fecal

Correction of Curved Tibia —Hopkins in the *Annals of Surgery* for July, describes an operation which consists of a combination, in a modified form, of osteotomy and osteoclasis. In reality, he performs two operations, incomplete osteotomy and osteoclasis, in the first, dividing the bone, with a chisel, one half of its thickness at its inner curve When the skin wound is healed, but before bone repair has restored the original strength, the osteoclast is applied and the deformity corrected by a fracture at the weak point of the bone He reports one case

In Favor of the Post Graduate Hospital —The report of a special committee appointed to investigate charges against the New York Post Graduate Medical School and Hospital was adopted at a meeting of the State Board of Charities today The charges were that money given for the endowment of beds had been misapplied, and that the city of New York had paid for children who had never been in the institution The report says that the charges were not sustained —*N Y Sun*, July 13

Cerebro spinal Fever —Osler (*Maryland Medical Journal*, July 16) reports seven cases He says the disease is never pandemic, but the outbreak is more or less localized and there is an absence of any continuous extension He considers the treatment still in an unsatisfactory state, and in four of his cases recovery did not seem to follow the use of any special drug nor any special treatment. He advises sponging, etc., for fever, also an ice cap and opium for the pain Counter irritation he considers important, the best method being to "touch along the spinal column lightly with the Paquelin cautery "

Multiple Neuritis —Ruffin (*Medical Record*, July 9), points out that the diseases with which multiple neuritis are confounded are acute ascending paralysis of Landry, diffuse myelitis and spinal meningitis, anterior poliomyelitis and locomotor ataxia, it being most apt to be confounded with the latter He believes that absolute rest in bed should be insisted on in all forms of the disease, and symptomatic treatment be resorted to He advices massage as of great importance, often using it from the beginning of the attack Aside from alcohol, he considers lead poisoning the most frequent cause for peripheral neuritis, paralysis of the wrist extensors being the most striking feature

Cholelithiasis in Infancy and Childhood —Wendel (*Medical Record* for July 9) writes concerning the symptomatology and diagnosis of these cases, basing his paper on observations of sixteen cases in persons under eight years of age He confirms former observations that in young persons jaundice caused by gall stones without pain is rare, and says that in young individuals, as a rule the expulsive faculty of the bile duct does not permit the calculi to remain long in the common duct, and in these cases jaundice is so slight as to be apt to be overlooked He believes that in every case of convulsion occurring without premonition, gall stone colic should not be exclued as a cause until a careful examination has been made, this being often overlooked in the case of young persons

Milk for Infant Feeding —Freeman presents a summary of the answers received to questions sent to the members of the American Pediatric Society as to whether the milk used for infant feeding should be heated for the purpose of killing germs, and if so, at what temperature and how long continued, in the *Archives of Pediatrics* for July The replies showed a remarkable unanimity of opinion, the predominating opinion being that raw milk would be the best food if it were possible to obtain it clean, while a considerable number evidenced their willingness to take their chances with raw milk during certain seasons and under certain conditions He believes that under present dairy hygiene some sort of sterilization must be used, and favors pasteurization at a temperature of about 155 degrees F for thirty minutes, followed by rapid cooling, as such temperature destroys the germs of diphtheria, typhoid fever and tuberculosis This at the same time does not give the milk a "cooked milk" taste, and chemical changes would not occur until a temperature of 10 degrees higher was obtained

Suture Material —Gordon (*Medical News*, July 16), in a paper on "Suture and Ligature Material—Absorbable and Non Absorbable," believes that silver wire is entitled to preference over nearly all kinds of non absorbable material, silkworm gut coming nearer to this than any other His conclusions are 1 All suture material unabsorbed must necessarily have more or less exudate about it. 2 Such exudate is of lower vitality than normal repair where tissues are just approximated and not strangulated 3 A few days only are necessary to insure repair, if there is no infection, and therefore in cases where no great amount of strain exists, absorbable sutures only are needed 4 Where continual strain on the parts is inevitable, non absorbable sutures should be used for at least two weeks, but should be so placed as to be removable 5 For such sutures silkworm gut seems to be the best, as it can be made sterile and kept so 6 For all other purposes catgut is sufficient. 7 Inflammation is always destructive to complete repair 8 Inflammation is always due to infection 9 Sterile catgut or kangaroo tendon should therefore fulfil all indications for suture or ligature material, with the exceptions named

Anomalous Cords of the Heart —Lewis (*Philadelphia Medical Journal* of July 16) in a dissection of eighty hearts, found fifty one showing anomalous cords Some of the hearts were from monsters, a few were abnormal only as to their tendinous cords and the others pathologic Thirty two of the fifty one had abnormal bands across the cavity of the left ventricle and in twelve of these more than one such band, some being branched or forming a net-work across the cavity As to the right ventricle, twelve contained one or more such bands, and in five of these they were multiple Six of the above showed aberrant cordæ tendineæ in both ventricles, and in six there were one one or more cords, or a network running vertically across the posterior appendix of the right auricle Thin cords singly or in net work occurred in eight cases in addition to or in place of the valve of the coronary vein, and four hearts had bands stretched between the papillary muscles No case showed a cord across the cavity of the left auricle He believes that the aberrant cords are of clinical significance in adding murmurs which obscure the cardiac sounds, or serving as points on which the blood may clot, or interfering with the complete opening or closing of the mitral or tricuspid valves

That Tuberculosis Number —We notice that our esteemed contemporary, the Philadelphia *Medical Journal*, is patting the London *Practitioner* on the back for publishing a recent issue entirely devoted to tuberculosis, a movement which originated with the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION with the issue of Feb 5, 1898, but which our valued contemporary did not venture to make mention of, although in that issue of the JOURNAL there appeared thirteen original articles, comprising forty pages of two columns each, on various phases of tuberculosis, also two exhaustive editorials and several pages of miscellaneous items on the subject In addition to this mass of matter on this special subject, the JOURNAL of that issue also contained other editorial and department matter on general subjects These papers were from the pens of leading men in medicine throughout the country, and a column of the JOURNAL is practically equivalent, in amount, to a page of the *Practitioner* When it is remembered that the *Practitioner* is a monthly publication and that this issue of the JOURNAL was our regular weekly edition, the matter is still more noteworthy

In Praise of Ebriety —To show how the times have changed, let it be known that an old and curious book exists upon the virtues of alcoholic addiction It was printed for E Curl, against Catherine Street, in the Strand, London, in 1723, and is marked "Price Five Shillings" The title is as follows "Ebrietatis Encomium, or the Praise of Drunkenness, wherein is authentically and most evidently proved, the necessity of frequently getting drunk, and that the practice of getting drunk is most ancient, primitive, and catholic Confirmed by the example of Heathens, Turks, Infidels, Primitive Christians, Saints, Popes, Bishops, Doctors, Philosophers, Poets, Free-masons, and other men of learning in all ages By Boniface Oinophilus, de Monte Fiascone, A B C"

> Vinum retificans cor hominis,
> Narratur et Prisci Catories,
> Saepe mero caluisse virtus
> —Horatius

The author lays down the following rules for getting drunk, to wit 1 Not too often 2. In good company 3 With good wine 4 At convenient times 5 Force no one to drink. 6 Do not push drunkenness too far

A Medico Cleric gets Some Advice Gratis.—The *Lancet* tackles a would be homeopathic clergyman as follows "We extract the following advertisement from the Bazaar"

MEDICAL —Wanted Standard Homeopathic books and drugs Hints gratefully accepted VICAR B

We are happy to give "Vicar" a hint and hope he may be as grateful for it as he promises to be in the advertisement We might multiply hints, but one hint will cover all the ground It is that he should not interfere with what he does not understand Suppose he drugs a person and that person dies, "Vicar" can not sign a death certificate, at least not a valid one In that case the Coroner at the ensuing inquest would certainly make strong remarks upon "Vicar's" unfortunate position, and "Vicar" might even find himself nearer a trial for manslaughter that would be seemly in one of his cloth.

Curvature of the Neck of the Femur —Frazier writes on this subject, sometimes called "Coxa Vara," in the *Annals of Surgery* for July He says there is usually no relation between the physical development of the patient and the deformity Atrophy of the muscles of the thigh is present to a greater or less extent in every case, according to the amount of functional disturbance of the joint, and in some cases the difference in circumference between the two thighs amounts to seven centimeters The trochanter major is usually displaced upward, in many cases, upward and backward, and upward and forward in not a few cases As to the attitude of the limb, in sixty cases in which the position was abnormal, fifty four presented outward rotation Occupation seems to be the predisposing cause, also sex, 70 per cent occurring in males and 30 per cent in females For diagnosis, he advises examination as to the following points atrophy, position of the trochanter in relation to Nélaton's line, relative length of extremity, measured from anterior superior spine to internal or external malleolus, actual length of extremity, measured from tip of trochanter to external or internal malleolus, extent of outward rotation, limitation of inward rotation, restriction of abduction and adduction and disturbances of flexion or extension Treatment includes rest, extension and massage, with attention to hygiene and phosphorus internally, if there are evidences of rickets Operative interference is reserved for cases in which the disability is pronounced

Venomous Spiders —Dr Andrew Ross of New South Wales has reported a supposed case of serious toxic effect from the bite of a spider A boy, aged 5 years, while eating some bread and butter on a doorstep, suddely cried out and complained of being bitten on the neck behind the lobe of the right ear He pulled his hat off and threw it on the ground, when a large black spider with a bulbous belly and red spot on the back was discovered inside and instantly killed Curious toxic symptoms shortly afterward began to develop in the patient These were mainly acute pains in the legs and feet and inability to stand or walk On examination, a large erythematous circle at the spot where the spider was supposed to have bitten him was found The restlessness and acute suffering continued, and nothing afforded any relief The affected part was bathed in hot water, and at short intervals strong doses of ammonia were administered and teaspoonfuls of strong brandy were given until about four wineglassfuls had been used, but the symptoms were unrelieved It was not until five emetics had been taken and full vomiting induced that the patient began to improve Subsequently he recovered, but his convalescence was for some days delayed by the loss of power in the lower limbs, and recurring attacks of pain The genus to which the spider belonged was probably *lactrodectus*, of which in Australia there are two species, viz , *L scelio* and *L parseltii*. The bite of all species of this genus in every part where they are found, as for example in Southern Europe, California, North Carolina and New Zealand, is credited with venomous qualities in a marked degree and deaths of human beings have been reported as the result of such bites Some dead spiders of the Australian species which were sent to Professor Kobert of the Dorpat University were found to be inert as far as poisonous properties were concerned —*Medical Press and Circular*

Cincinnati

A VACCINATION STORY —Some months ago a bona fide case of smallpox was detected in the receiving ward of the Cincinnati Hospital He had lately been in a region known to be infected, and his latest boarding house was in a very densely inhabited part of the city, peopled for the most part by negroes It was deemed necessary by the health department that vaccination should be carried out in this locality on a large scale Many laughable incidents are narrated by the physicians to whom the work was assigned The greatest difficulty was encountered in making them submit, and only threats of a "ride in the wagon" could influence the most of them But when vaccinated, they became most zealous in pointing out to the amused officers the hiding places of others in the building One dusky matron called up stairs after her own arm had been thoroughly vaccinated, "Mistah doctor dar's a low down niggah under de bed in de fron' room " One of the physicians in his enthusiasm pounced upon the bed in question, which with a crash came to the floor, scattering bed slats and curses with equal impartiality in every direction "Say, white men, can't ye let a feller sleep?" came from the depths of the ruins, but his earnest plea was disregarded, much to the delight of the already vaccinated darkies who had gathered around to see the fun

San Francisco

SAN FRANCISCO COUNTY MEDICAL SOCIETY —At the June meeting Dr Thorne reported a case of removal of the stomach, gastrectomy, which he stated was the fifth operation of this kind that had been made The patient was a German woman 52 years old, and the family history was quite negative She had done a good deal of hard work, principally at the wash tubs, and had always had a good appetite For about four years there had been a good deal of gastric disturbance, principally confined to pain after eating, also flatulency When examined the tumor was found to be kidney shaped in the left hypogastric region and freely movable It was not differentiated from a misplaced kidney, though the two alternative conditions of cancer of the stomach and floating kidney were recognized The patient entered the hospital on June 23, and was operated upon on June 26 All preparations had been made to remove the stomach, if the condition was found to be one of cancer of that organ upon opening the abdomen This was found to be the case, and the operation for removal was at once undertaken. The omentum was ligated in sections and tied off Several adhesions were treated in the same way, and the organ at last freed from its connections The intestine below the pyloris was seized with a strong forceps, the blades of which had been covered with rubber tubing and the stomach tied off and cut away , a similar method was employed in dealing with the cardiac end of the stomach The esophagus had to be dissected away from adhesions and ligaments before it could be brought down low enough to tie to the intestine The cut ends were united by means of a Murphy button reinforced by a line of sutures During the operation the patient had been given regular doses of strychnin and whisky, hypodermically, and the total time of operation was two hours and forty five minutes She recovered from the anesthetic well and suffered little or no pain, but was intensely prostrated Strychnin, whisky, digitalin, etc , were given at frequent intervals, but the patient steadily sank , she was conscious and rational until the last, but died forty hours after the operation Her system had been so reduced by the long continuance of the disease that she was unable to rally from the slight shock of the operation Dr Chas G Levison reported several cases of operation upon the kidney with one of nephrectomy for angioma of the left kidney, the twenty eighth case reported as successfully operated upon The diagnosis was very difficult, as there was no symptom except the frequent appearance of blood in the urine, which when it occurred, was in considerable amount When there was no blood present the urine was free from casts, cells or crystals, and no indication of a diseased kidney was to be found At the time of hemorrhage the blood and clots so filled the bladder that it was impossible to obtain any information by means of cystoscopy It occurred to the doctor to make a trifle more pressure on the region of the kidney and see if any hemorrhage resulted , in this way he imagined he could gain some information as to which kidney was the affected one This was tried on the left side first, and the experiment was followed in fifteen minutes by a free flow of blood On this indication the operation was directed to the left kidney, which was found to be the site of a large angioma, located in the lower portion of the kidney The operation was entirely successful, and the patient has quite recovered with no indication of any recurrence

Philadelphia

MORTALITY STATISTICS —For the week ending June 16 there were 493 deaths, a decrease of 227 from the previous week and 135 from the same period last year The low mortality for the week is no doubt due directly to cooler weather, there being fewer deaths noted among children

INFECTIOUS DISEASES —This week Diphtheria, 14 deaths, 73 cases , scarlet fever, 27 cases , typhoid fever, 5 deaths, 50 cases Last week Diphtheria, 11 deaths, 49 cases , scarlet fever, 3 deaths, 17 cases , typhoid fever, 13 deaths, 50 cases

PREVENTION OF DEATH FROM LIGHTNING —During the 4th of July festivities, while thousands of persons were in Fairmount Park, a severe thunder storm came on, and while there was only one or two severe flashes of lightning, one of them struck in the midst of a crowd sheltered under a tree, killing three persons instantly It now seems that the Park Committee on further inquiry learned from several leading physicians that suspended animation following lightning stroke does not always prove fatal provided the necessary precautions are taken Dr J Howard Taylor, Chief Medical Inspector of the Board of Health, is quoted as saying "There can be no doubt that there are cases of suspended animation from lightning stroke or other electric shock just as there are such cases of drowning There certainly ought to be rules thoroughly known by police and park guards for the treatment of victims of electric shocks. Such rules would be of especial value in saving the lives of men shocked by electric wires in case of fires, etc. The fact that death is not always instantaneous following an electric shock reflects unfavorably on punishment of criminals by electrocution " It is also stated that the United States Weather Bureau has tabulated some imported statistics regarding this subject "In the United States for the five years 1890-1894, 1120 lives were lost by lightning stroke or an average of 224 lives each year Nearly all of these fatal loses occurred from the month of April to September, the maximum deaths occurring during June and July Thickly settled communities are far less subject to lightning stroke than sparse settlements In general the risk in the country is five times greater than in the city Geologic conditions are also important factors, as for instance chalk is least susceptible to lightning stroke Marl is twice as liable as chalk, clay seven times as liable, sand nine times and loam twenty two times Different kinds of trees are liable in different degrees The oak is most frequently struck, while the beech is least frequently affected Pines are struck fifteen times more frequently than the beech and the oak fifty four times Most generally trees struck are those standing in the clear or on the edge of forests, their height averaging from fifty two to sixty six feet" It is reported that the lightning strokes which recently proved fatal concur accurately with these statements Since this subject has received the attention of the Park commissioners and physicians, it is proposed that rules be formulated for the proper guidance of park guards in resuscitating patients, such as arousing the patient, application of the cold douche, friction of the extremities, warm applications, administration of stimulants, and artificial respiration to be persisted in for at least one hour

Report of Howard Hospital —The 44th annual report has just been issued The total number of new cases treated in the hospital and dispensary was 8306, compared with 8431 last year, 8438 for 1896, and 7167 for 1895 The total number of visits of patients was 32102, compared with 28180 last year and 28065 for 1896 Of the total number of new patients there were 6491 white and 1815 colored, 3911 being males and 4395 females Nativity United States, 6140, Ireland, 1278, Italy, 318, Russia, 221, Germany, 173, England, 129, Scotland, 47 For 1897, of 8431 cases treated, the nativity was as follows United States, 6092, Ireland, 1447, Russia, 255 Italy, 240, Germany, 183, Scotland, 47, France, 7, Arabia, 4.

A third story has been added to the annex department and a sick diet kitchen constructed on the second floor, greatly facilitating the preparation of proper food for patients The total receipts as shown by the treasurer's report were $35,378 84, and the expenditures $31,438 59, leaving a net balance in cash, March 1, 1898, of $3,912 30

Medical Examining Board —As a result of the examination for licensing physicians by the State Board of Pennsylvania, 317 applicants presented themselves for examination, out of this number 271 obtained certificates, 43 failed to pass, 2 were dismissed for unfair methods, while one withdrew to join the army A fee of $25 must accompany each application, which fee is divided among the members of the Board Dr W B Stanton of Philadelphia received the highest general average, 91 73, out of a possible 100

Affected with Tuberculosis —Dr Pearson, of the Veterinary Department of the University of Pennsylvania, and State Veterinarian, has recently made his report to Governor Hastings in regard to the work of the State Live Stock Sanitary Board It is stated that from June 1, 1897, to June 1, 1898, 1900 cattle were inspected and the number of infected cattle was 12 per cent The greatest number of infected cattle came from New York, New Jersey and Maryland, while some came from the Western States Of 1000 cattle from Ohio six were found affected Dr Pearson has been appointed to represent Pennsylvania at the International Tuberculosis Congress at Paris, July 27 to August 3 inclusive, and is now on his way to that city

Louisville

Louisville Medical College —Attorney John S Jackman has just been appointed by the judge of the common pleas court a receiver for the Louisville Medical College property Some weeks ago the Fidelity Trust and Safety Vault Company filed suit in the law and equity division for sale of the property, being large holders of the college paper, and a decree of sale was ordered An appeal was taken by Dr Samuel Cochran to the court of appeals, and pending a decision of this, a receiver was asked to preserve the property and lease it Several pleadings were filed in this suit, several sensational statements being made by Dr Samuel Cochran in regard to the financial conduct of the institution

Laws —Dr Wm V Laws, for some time assistant to Dr J M Mathews, has accepted a position in the Medico Chirurgical College of Philadelphia, as demonstrator of surgery, where he will be associated with Prof Wm Rodman, formerly of this city, professor of surgery and clinical surgery Professor Rodman will not leave for Philadelphia until September 30, having an office for the summer at Second and Walnut Streets

Mathews —Dr J M Mathews, president elect of the American Medical Association, and Mrs Mathews, who have been spending some time on the California coast, have returned

Marvin —Dr J B Marvin and family will sail August 1 for Europe, for the summer months

Cartledge-Bullitt —The profession of Louisville have received announcements of the partnership of Dr A M Cartledge and Dr James B Bullitt They will office at Second and Broadway

McMurtry —Dr L S McMurtry will spend his vacation fishing in the Canada lakes

Meyers —Dr Sidney J Meyers, until recently associated with Dr Wm L Rodman in this city, has been appointed acting assistant surgeon in the army and has reported for duty to General Brooke at Chickmauga, Ga , in the division hospital

Addresses —At a meeting of the Executive Committee of the Mississippi Valley Medical Association, the following were chosen to deliver the annual addresses at the next meeting in Nashville Dr James T Whittaker of Cincinnati, on medicine, Dr George Ben Johnson of Richmond, Va , on surgery.

Committees —The following are the Committees appointed by the Chairman of the Committee of Arrangements for the next meeting of the Mississippi Medical Association Arrangements Duncan Eve, Chairman, W D Haggard, Jr , Secretary, J A Witherspoon, Paul F Eve, R E Fort, S S Crockett, G C Savage Reception L B Graddy, Chairman, W A Atchison, W D Haggard, Sr , W F Glenn, W L Dudley, James B Stephens, W C Bilbro Entertainment J Y Crawford, Chairman, W G Ewing, Larkin Smith, A B Cook, J W Handey Exhibits Dr Deering, J Roberts

Quarantine —The epidemic of smallpox in Jackson County has assumed such a serious aspect that, as the county court will not appropriate sufficient funds to stamp it out, the State Board of Health has by the Executive Committee, at a meeting held at the office of Dr Wm Bailey, on the 21st inst , declared a rigid quarantine against Jackson county The adjoining counties are Madison, Clay, Estell, Lee, Owsley, Laurel and Rockcastle The Quarantine Proclamation states that "After due notice and repeated urging from this and the County Board of Health, the authorities have persistently failed to take any steps to prevent the spread of this highly dangerous and contagious disease the State Board of Health of Kentucky declares Jackson County and each of its inhabitants to be in quarantine, and establish the quarantine line along the entire boundary of said county, and forbids any person to enter or leave said county without a special permit from this Board, under the pains and penalties of law, which is a fine of not less than $50, nor more than $500, or imprisonment in the county jail of not less than sixty days, or both fine and imprisonment " This is the first time in sixteen years that an absolute quarantine has been declared in the State

Societies

The following recent meetings are noted

Illinois —Iowa and Illinois Central District Medical Association, Rock Island

Indiana —Mitchell District Medical Association, West Baden Springs, July 19 and 20, Tri State Medical Association Elkhart, July 19

Iowa —Botna Valley Medical Society, Atlantic, July 14.

Maryland —Cecil County Medical Society, Elkton, July 14

Minnesota —Interurban Academy of Medicine, Duluth, July 20

Missouri —St. Louis Medical Society, July 14

Ohio —Eastern Ohio Medical Association Steubenville, July 12, Muskingum County Medical Society, Zanesville, July 14, Northern Ohio District Medical Society, Fremont, July 21.

Pennsylvania —Cumberland County Medical Society, Newville July 12.

Texas —Briggs Medical Society, Waxahachie, July 12, Central Texas Medical Association, Temple, July 12 and 13

Vermont —Rutland County Medical and Surgical Society, Burlington, July 12

Virginia —Seaboard Medical Association, Norfolk, July 15 and 16

THE PUBLIC SERVICE

Movements of Medical Officers in Active Service —Assigned to duty with the 2d Army Corps General Wm M Graham, Camp Alger Va Majors Jabez N Jackson and Wm F de Niedman, brigade surgeons To the 3d Army Corps, General James F Wade, Chickamauga Park Ga. Major Guy L Edie, brigade surgeon from San Francisco, Cal and Acting Asst Surgeon Robert W Andrews from Poughkeepsie, N Y To the 4th Army Corps, General J J Coppinger, Tampa, Fla Major Edward Martin, brigade surgeon, relieved from duty with the 2d Corps, Capt E L Munson, U S A., from Ft Monroe, Va, recently from Santiago, Cuba, Capt Allen M Smith, U S A, from Ft Hamilton, N Y, and Capt Champe M McCulloch from Ft Barrancas, Fla, and the following acting assistant surgeons Irving E Bennett from Ft. Delaware Del, Patrick H McAndrew from Washington, D C, G Moreno de la Torre from the hospital transport *Olivette* E A Romig from Big Rapids, Mich, and Paul C Hutton from Washington, D C To the 5th Army Corps General Wm R Shafter Santiago, Cuba Major W C Gorgas, brigade surgeon, relieved from the hospital ship *Relief* Acting Asst Surgeons R Fleming Jones and H J Thomas from Winston N C, to go by way of Tampa, Fla, Acting Asst Surgeons Aristides Agramonte and Charles T Newkirke from Washington, D C, to go by way of New York City, Acting Asst Surgeons Paul Mazzuri and Myer Herman from New Orleans, La., and J F Archer from Shelby Miss, to go by shipping on the *Resolute* at New York City, and Acting Asst Surgeon Domingo Lagomasino and Asst Surgeon B H Kittrell, 1st Mississippi Volunteer Infantry, to go by shipping on the *Olivette* at New York City To the Leiter general hospital Chickamauga Park, Ga. Capt Geo M Wells, Asst Surgeon U S A., from Ft Ringgold, Texas, and acting assistant surgeons John A Metzger and Ira C Brown from Washington D C To the general hospital, Ft McPherson, Ga. Major Royce D Fry, brigade surgeon To the general hospital Ft Monroe, Va Capt Francis A Winter, Asst Surgeon U S A, and acting assistant surgeons Samuel P Cottrell and Edward J Mayer

Nominations by the President.—To be Asst. Surgeons 2d Volunteer Engineers, Edward J Barrett, 3d Volunteer Cavalry, Edward S Grigsby, 2d Volunteer Infantry, Charles Bruning, and 3d Volunteer Infantry, William A Chapman

Major George Franklin Shiels has resigned from the 8th California Volunteers to accept position as brigade surgeon

Resigned —Major George D Ramsey, Surgeon, 69th New York Volunteers

Disability Existing Prior to Enlistment.—The following, providing for the discharge of volunteer soldiers unfit for military service by disabilities existing prior to enlistment, was published from Headquarters of the Army July 16, 1898 The necessity for this was developed by the examination of men for transfer from the line of the volunteers into the hospital corps of the regular army So many of these men were found to be physically unfit for service that a general weeding out was considered necessary

Information having reached the War Department that, notwithstanding the medical examination prior to muster in, men have been enlisted in the Volunteer Army who should have been rejected at that examination as unfit for military service, the attention of chief surgeons is directed to this subject as one of great importance Systematic inquiry with a view to eliminating such men, should be made in the various regiments and other commands by the medical officers on duty with them A board of medical officers should be appointed in each division to carefully examine and make recommendations in each of the cases submitted by individual or regimental medical officers In every case where discharge from service is recommended it should be seen that the certificates of disability embody a statement to the effect that the cause of the disqualification for the military service existed prior to the enlistment of the man, if such is found to be the fact Department and corps commanders are authorized to order discharges on certificates of disability such orders to be carried out by the regimental, independent battalion, battery or detachment commanders as the case may be Such provisions of paragraph 140 of the Regulations as are inconsistent with the foregoing are suspended during the war

In the examination of certificates of disability for discharge it is enjoined upon the chief surgeons, and others accountable to observe that there is no conflict between the reports of company commanders, medical and other officers thereon, as to whether disability was incurred in line of duty, or not in line of duty If any discrepancies exist in this particular every possible means will be employed to harmonize the reports before finally forwarding the papers to the Adjutant General of the Army

PAMPHLETS RECEIVED

A Second Contribution to the Treatment of Cancer by Injections of Alcohol By Edwin J Kuh Chicago Reprinted from Phil Med Jour

Annual Report of the Board of Health of Winona Minn Paper Pp 8 Winona 1898.

Baltimore Medical College Annual Announcement of

Diseases of Tropical Climates their Prevention Diagnosis and Treatment By T S Dabney, New Orleans, La Reprinted from N Y Med Jour

Etiology and Pathology of Delirium, The By C W Simmons, Philadelphia Reprinted from Med Times

Gross Medical College Circular of Information, Denver, Colo

Das Ichthyol in seiner Verwendbarkeit f die Schiffs- und Tropen Praxis By Dr Leo Leistikow, Hamburg Reprinted from Archiv f Schiffs- und Tropen-Hygiene

Kryofine By Eugene Beck Reprinted from New Eng Med Mo

L'Ichthyol les Lymphangites de l'enfance and leurs Consequences By Dr Moncorvo fils, Rio de Janeiro

New and Original Method of Osteoplastic Resection of the Skull By J J Buchanan, Pittsburg Reprinted from Med Record

Radical Cure of Inguinal Hernia by Prof Kocher's Latest Method By J J Buchanan, Pittsburg Reprinted from Phila Med Jour

New Forceps for Intestinal Anastomosis By Ernest LaPlace, Philadelphia Reprinted from Phil Med Jour

Observations upon the Diagnosis and Surgical Treatment of Certain Diseases of the Stomach, Based upon Personal Experience By W J Mayo, Rochester, Minn Reprinted from Med Record

President's Address before the So Carolina Med Association By Chas W Kollock, Charleston, S C

Prostatorrhea Simplex and Urethrorrhea ex Libidine By F R Sturgis, New York, N Y Reprinted from Jour of Cutan and General Urinary Disease

Pulte Medical College 27th Annual Announcement Cincinnati, Ohio

Relations of the People of the United States to the English and the Germans, the By William Vocke, Chicago

Report of the Committee on Car Sanitation By Granville P Conn, Concord, N H Reprinted from Trans of Am Public Health Association

Sanitary Redemption of Havana, the Need and the Means By George Homan, St Louis, Mo Reprinted from Med Review

Septic Perforation of the Right Internal Carotid Artery By A Jacobi and James Ewing, New York, N Y Reprinted from Phila Med Jour

Tribute to Dr J N Brown By W F McNutt Reprinted from Pacific Med Jour

Tonic and Spasmodic Intestinal Contractions with Report of Cases, Two Interesting Cases of Intestinal Resection with End to-end Anastomosis By A O Werder, Pittsburg, Pa Reprints

Ueber die Andwendung des Ichthyols bei Augenkrankheiten By Dr M Eberson, Tarnow Reprinted from Klin therap Woch

Woman's Medical College of Baltimore Announcement and Catalogue

Woman's Medical College of the New York Infirmary for Women and Children Annual Catalogue and Announcement

Woman's Medical College of Pennsylvania Catalogue and 49th Annual Announcement. Philadelphia

CHANGE OF ADDRESS

Burroughs, H S, from 6200 Penn to 301 N Highland Avenue, Pittsburg, Pa

Braughton, G A, from Chino, to Oxnard Cal

Campbell, T F, from Belle Fourche, S D, to Springview, Neb

De Witt, Dr, from 1613 Polk to 1196 Kentucky Street, San Francisco, Cal

Faukboner, A V, from Fairmount to Summitville Ind

Ferguson, C J, from 574 South Fremont Street to the Denison Bldg, Denver, Colo

Fithian, J W from Camden to Sea Girth, N J

French, E H, from Piqua, to Glendale, Ohio

Grieger, H, from 3132 Boulevard to Cheesman Block, Denver, Colo

Gilbert, B, from Denver to Durango Colo

Gordon, H S, from Tombstone, Ariz, to 2508 South Flower Street, Los Angeles Cal

Gillmore, R J from Denver, Colo, to 460 E 63d Street, Chicago, Ill

Hannan, J C, from Hoosick Falls to Port Chester, N Y

Keen, E J, from Denver to Longmont Colo

Klein, M J, from 1128 Washington Boul, to 823 Lincoln Avenue, City

Loeb, L, from 371 Center Street to Claremont Bldg, Chicago, Ill.

Palmer V R, from New Castle to 209 Penn Street, Braddock, Pa

Swartz T B, from 77 39th Street, to 3543 Cottage Grove Avenue, Chicago

Sterrett J K, from 6200 Penn to 122 Collins Avenue Pittsburg, Pa

Valentine, L P, from Western Union to Somers, Wis

Wiggins, O C from Kingstone, R I, to Keysville, Va

LETTERS RECEIVED

Ashton, A S, Piqua, Ohio, Ambrose, O A, St Louis, Mo, Applegate, J C, Bridgeton N J

Beard, R O Minneapolis Minn Bufkin C W, Runnells, Iowa Battle Creek Sanitarium, Battle Creek, Mich Baker H B, Lansing, Mich

Cheatle, C M, Buda Ill Caldwell, J J, Baltimore, Md Clark, L Pierce, Sonyea N Y Carrow, J F, Marion, Mich, Critchlow, J F, (Mrs) Salt Lake City Utah

Davidson F B, Fleetville, Pa David, E L, Louisville, Ky Dexter Folder Co, Pearl River, N Y, Dewar J B, Cedar Springs, Mich, Davis, L W, Knoxville, Tenn

Eshner A A, Philadelphia, Pa

Graefe Chas, (2) Sandusky, Ohio Gage, W V McCook, Neb

Hamill J R, Chicago, Ill Hotz, F C Chicago Ill, Hektoen, L, Chicago, Ill Hawkins T H, Denver, Colo Hausheer, W V, Detroit, Mich, Hodges J Allison, Richmond, Va Holmes, Bayard, Chicago, Ill, Hirth, Geo J, Milwaukee Wis Hoffman, D S, Lake City, Colo, Haggard, W D, Jr Nashville Tenn

Kaull W M, Princeton Ill Knapp M S Trenton, Mich, Knight S Helen New York N Y

Lea Bros & Co Philadelphia Pa

Moore H C, Beeville Texas Metcalf, Wm F Detroit Mich Manitou Mineral Water Co Manitou Colo Montgomery, A B, Reynolds Ill Murphy, J Sherman N Y

N Y Post Graduate Medical School and Hospital, New York, N Y

Philadelphia Medical Publishing Co Philadelphia, Pa Paquin Laboratories St Louis, Mo

Rush Medical College Chicago Ill Roosa D B St John New York N Y

Simplex Lamp Mfg Co Brooklyn N Y Shastid T H, Battle Creek, Mich Smith Kline & French Co Philadelphia, Pa Spring, Edwin H, *Gloucester Eng* *Stedman* A *Denver Colo* Schuster, Ed & Co Milwaukee Wis

The Maltine Co, New York N Y Talbot Newton Boston, Mass Tuley H F Louisville Ky

Vaux F Leonard Ottawa, Ontario

Walker H D Detroit Mich, Whitehead, W H Atlanta Ga, Walling P A Park Rapids Minn Winslow, J R, Baltimore, Md

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ORIGINAL ARTICLES

A CONSIDERATION OF FOUR CASES OF EPILEPSY WITH REFERENCE TO CAUSE

Presented to the Section on Practice of Medicine, at the Forty ninth Annual Meeting of the American Medical Association held at Denver, Colo , July 7-10 1898.

BY CHARLES S BOND, M D
RICHMOND IND

It sometimes happens that a consideration of much worn subjects is profitable, and I therefore ask your indulgence for a few minutes to a subject, which is as old as any, in medicine, and which has profited as little as any, by the experience of past centuries Undoubtedly the cause of this tardy progress is due in large measure to the multiplicity of irritations, which directly or indirectly produce the cortical explosions Barring traumatic causes of direct influence, the study of peripheral sources of irritation is most interesting and fraught with the most lasting results It is to this side of the study that the cases, selected out of a large general practice, are intended to be added

☐ *Case 1* is that of a little boy nine months old, who had his first epileptic seizures when but three months of age The parents of this child are free from all influencing hereditary diseases, are not of neurotic temperament, and have neither of them ever manifested any tendency to epilepsy Child cut two lower incisors at three months of age Had no enlargement of head or abnormal curving of bones of spine or extremities. Has no organic disease of kidneys or liver, Was born under my care without instruments and being the sixth child, labor was easy Child has never received any injury to head Bones of skull do not overlap, nor are they in any way malformed Child has never had any of the exanthemata, or other serious diseases, other than the one under consideration So far as can be determined it has not inherited syphilis or tuberculous tissue No intestinal worms were passed either before medication or afterward It weighed about ten and one half pounds at birth and increased its weight to eighteen pounds at the end of three months Since this time diet has been limited and child now weighs about twenty two pounds. It had never taken drugs of any kind until day of first fit, and had not been sick, in the belief of parents Mother is a large, healthy woman, who had successfully nursed through babyhood four other healthy boys Milk upon examination was found normal after child had first fit. Child was allowed during holidays to eat largely of candy and crackers for three or four days At the end of this time the first seizure came on about seven o'clock in the morning, after a restless night. When called I supposed I had one of the numerous phases of convulsion so often noted in children As I did not see this attack, was only permitted a description of it, which was to the effect, that child turned its head to right side, while in mother's arms, and began jerking the arms, then the head, and finally the whole body Eyes were partially open, and eyeballs rolled upward with irregular motion

At time of visit which was about one-half hour after seizure was over, which they said lasted about ten minutes, I found child still unconscious Pulse 120 Temperature normal, skin moist Pupil of eyes dilated, with balls turned upward I advised a brisk cathartic of citrate of magnesia, and returned the same evening to learn the child had gained consciousness in about one hour, was restless under influence of previous experience, and cathartic Bowels had moved three times and stools contained large quantities of fermented milk and pieces of undigested crackers Child had still no fever or other evidence of organic disease aside from symptoms detailed During the day following child developed a condition of larynx which excited both curiosity and fear Often, but not always, when the child would undertake to drink or cry, the larynx would be thrown into a tonic contraction which would last one-half minute and be accompanied by the most violent efforts at inspiration, the face becoming livid and very anxious until relaxation came on rather slowly and relieved No loss of consciousness seemed to accompany these movements, yet within the same day child would often, some ten or twelve times, fix its eyes upon some object, or stare into space, without parents being able, for a short time, to attract its attention These two evidences of petit mal have continued with more or less frequency for the past four months, while but four attacks of the heavier type have occurred, and these have been on two occasions accompanied by errors in diet by indulgence of parents Am thoroughly convinced that the cortical explosions are induced by the toxic influence of fermenting food in the alimentary canal It would seem to be the general effect, yet not being able to obtain urine from so young a child, it can not be definitely affirmed, that some end products might not have had also their normal lines of cleavage disturbed, with consequent leucomaine poisoning Limiting the diet, opening the bowels, and promoting good digestion have still further argued, by much improvement in the direction of this conclusion

Case 2 —Boy 6 years old Had his first epileptic seizure when seven months of age As I did not see him until he was 4 years of age, I have been compelled to content myself with the history as given to me by the child's mother These attacks as described by her were probably epilepsy, and occurred every month or oftener, at irregular intervals, and although constantly under a physician's care, grew worse both as to interval and severity of attack When first seen in a convulsion three years ago the following memoranda were made Face pallid, pupils dilated and turned upward, skin covered with profuse perspiration No fever Face was turned to right side, and muscles of arms in tonic contraction, thumbs being drawn into palmar surface tightly Foamed at mouth and had bitten tongue slightly Seizure lasted about thirty minutes when it was succeeded by an interval of one hour of profound unconsciousness, after which he slowly regained a knowledge of his surroundings

Father in this case has within the last four years, developed locomotor ataxia Is still able to attend to business Mother at time of birth of this child had three uremic convulsions, and child was hastily delivered with forceps No c [illegible] her [illegible] tendencies have been transmitted [illegible] as learned from [illegible] stammers in spee[illegible] head, even including forceps delivery He is about normal as to weight, active but impulsive Eats heartily, and occasionally voraciously Has no evidence of rickets Has never had any of the exanthemata Kidneys produce a normal quantity of urine, with urea and uric acic in proper proportion The uric acid group, including xanthin and paraxanthin, was normal even following severe attacks Fits occurred most often at night but occasionally during the day Child had quite often during the day very unique pharyngeal contractions which were accompanied by a fixed gaze and a loss of consciousness Radical errors in diet were often committed because of over-indulgent parents, and these errors were always marked by increased major and minor seizures Conversely, the strict adherence to a limited diet of milk, without bromides, caused a very much longer interval, so much so that with aids to digestion there is hope that child may entirely recover from attacks

Case 3 is that of a girl 17 years of age Had first fit at age of 13, when she had three or four per day for an interval of four weeks Menstruation had been established at 12 years of age Mother healthy and no hereditary tendencies Father now has paralysis agitans but otherwise family history is good Girl is well developed Weight about 110 pounds, height 5 feet, 4 inches Has two healthy sisters, but no brothers She has never had any serious sickness Has had no injury to head Can find nothing abnormal about uterus or clitoris Has no habit of masturbation so far as careful watching can detect. In fact her history is negative except from causes that have their origin in the alimentary canal Patient presented a model picture of gastric atony brought about in her case no doubt by prolonged habit of overloading the stomach Physical examination and use of stomach tube disclosed a very greatly dilated stomach with consequently lowered powers of digestion, fermentation and retarded digestion being the inevitable result. This result was not mitigated even in bowels as particles of fermenting food were often passed in quantity per rectum This was the condition at the time of first seizure By the use of lavage twice per week and limiting the diet to one half pint of milk every three hours for six weeks, the epileptic manifestations subsided With but one exception this condition of passiveness continued for three years In the meantime patient was gradually allowed a more extended diet, and after a time relapsed into old habits, when the seizures returned with renewed vigor Most of them come on in the night, but several times she has fallen in the day time Generally bites her tongue, and usually cries out upon the beginning of the attack The same conditions exist as were found in the first instance, as regards stomach troubles

I believe the source of irritation is also sharply defined in this case, and hope can be expressed in her case in my judgment This last invasion has existed now about five months, with fewer attacks all the time At first of period three or four attacks occurred daily while now only one a week. One curious fact which I think worthy of mention in this case was observed, and that was that when bromid of sodium was given it so disturbed the stomach that attacks were increased at the same time she had aphasia, stammered, and could scarcely express her thoughts This was after the use of forty-five grains per day for eight days When drug was discontinued symptoms cleared away again This was repeated three times with the same results, so that I feel confident of the observation

Examination of urine in this case showed slightly diminished quantity of urea for twenty-four hours but no other abnormal products Uric acid normal, paraxanthin only a trace, for four litres of water

Case 4.—Young man 27 years of age Family history good, on side of both parents Has never been sick except during childhood Has never received any severe injury Was well born but has neurotic temperament. Has no organic disease of kidneys, liver, spleen, heart or lungs Mentally quite bright and has no defects of special senses Urine shows no abnormal products in large quantities Ten years ago while in school had first fit After this had most of seizures at night about one or two months apart. About five years ago they had attained an average of one every two weeks Has no petit mal, but says he can feel the approach of the attacks some time before they come on, by a peculiar nausea and hot sensation in epigastric region This patient for six years had been under treatment of very competent specialists without relief Bromid of sodium, and in fact all the bromids had been tried without limiting disease more than a short time

A careful study of this patient four years ago, revealed the following facts, other than those before mentioned Was very tender in region of epigastrium Had dull, with occasional sharp pains in left side, augmented about one hour and a half to two hours after eating Had a voracious appetite for food rich in carbohydrates, ate rapidly and failed to masticate his food properly, and went at once into active physical labor A test meal, after one and one half hours revealed a plus quantity of HCl, showing abundant remnants of the carbohydrates with absence of albumen and muscular fibers as revealed by the microscope This condition was most marked at night, and it was at night that he had the epileptic seizures I therefore, omitted all bromid salts, and recommended lavage before bed time—about two and one half hours after evening meal Used four drams of bicarbonate of soda to quart of hot water Restricted diet to conform to these facts, using magnesia once a day to evacuate bowels On this plan patient went five months without an attack Interval of seizure has grown longer steadily, until it has reached nine months, and it is to be hoped that interval will increase indefinitely

It will be observed that these cases represent great variety as to age They include three boys and one girl, but they all have something in common, some form of irritation originating in the alimentary canal, causing, according to the best of belief, a cortical disturbance which in turn produces unconsciousness directly and reflex tonic and clonic spasm of peripheral muscular fibers This analogy has been sought from a number of cases under observation, because of the stronger proof that such cases are to have upon the more extended knowledge of peripheral irritants in epilepsy, a fact which neither therapia nor many bright minds in the profession, are wont very rapidly to appreciate Whether we believe in the causative influence of uric acid, or leucomain products from this group, or whether confidence is given to the total toxic effects of maldigestion, the fact still remains that a very strong relation exists between these products, and those cortical disturbances seen in the various forms, of so-called idiopathic epilepsy Other sources of extrinsic irritation are numerous and have received due credit in most instances long since, while this more obscure field, and therefore all the more interesting one, still presents much for careful study, in the differentiation of such irritants If the rationale of this phase of the disease is, therefore, that irritants from the digestive tract, through the blood, come in contact with the cortex, thereby evolving a constant or intermittent efferent current in like manner controlling the muscles, it would seem the highest service to such patients must come in the prevention of these products from entering the blood current Under this view it is difficult to understand how the bromid salts can do more than palliate and thereby perpetuate an evil which is quite removed from the drugged cortex Indeed, I shall venture the opinion, that in many of these cases, in the end the bromids do much more harm than good In the first place by suppressing to a certain extent the evidence of an evil, which at that period is the most amenable to treatment, and in the second place by injury which these drugs often have upon the already diseased digestive tract, and lastly, the unusual effect which sometimes occurs to the cortex itself

DISCUSSION

Dr C G **Stockton**—I have seen cases belonging to the class of cases the doctor has described so well, when I state that I state about as much as I can add to the discussion I have seen cases of epilepsy in which the convulsions disappeared and there was no return I have seen other cases in which the convulsions disappeared, but find only a temporary improvement, with a return of the seizures My own opinion is that, first, many cases can be relieved by proper attention to the gastro intestinal tract Secondly, that in many cases there may be some improvement by aiding digestion Thirdly, that there are many cases in which there is no improvement as far as can be found out

Dr **Lockard** of Colo —I should like to call attention to some rational causes that existed in a case that I had recently On the 12th of May last I was called to see a child, 2½ years of age, the messenger said the boy was about to die, for he was in convulsions Upon arriving at the home of the child I found the child had epileptic seizures I inquired into the causation or the history, and I elicited the fact that on the paternal side the great grandfather had been subject to epilepsy since childhood, he was then 64 years of age, and the attacks had begun in early childhood, when about middle age he moved to Colorado, when the attacks became less frequent I further learned that one or two other members of the family, also on the paternal side, were victims of epilepsy I therefore felt reasonably certain of the hereditary conditions being present. But to make sure that there could be no mistake in the diagnosis, and that it might possibly be a case of poisoning, because the attack came on so suddenly, the child being perfectly well all its life, I gave a hypodermic of apomorphia and I soon got the stomach contents The attack had come on soon after dinner The contents contained some blood that had been swallowed, nothing else was found The child soon rallied, and the next two or three days was apparently as well as ever It seemed to be a case of hereditary epilepsy It was also discovered that the child had a phimosis, but because micturition was not difficult, an operation was refused Here was found two pretty rational causes for the attacks After the second day the child began to be restless and irritable, he would rouse from his sleep suddenly, and he grew gradually worse The parents then called me in again, and I found symptoms of meningitis On the following day there were more symptoms of meningitis, and in the course of twenty four hours it turned out to be a typical case of tubercular meningitis—typical in every respect The child grew worse, Cheyne Stokes respiration appeared, and the signs were as typical as I ever saw The child died three weeks after the epileptic attack Here is a case in which we had two apparently rational sources to draw from Yet the resulting subsequent course proved the attack to be due to tubercular meningitis, this should make us bear in mind that there may always be other causes of convulsions, we should especially look out for meningitis I think in this case that the sudden development of tuberculosis brought on the attack

Dr **Tyson**—Doubtless all of us have had cases of epilepsy quite as difficult in explanation, some of them can be explained as Dr Bond explains them, partly the result of reflex irritation and absorption of toxic substances I remember two cases, both occurring in adults One was in a girl, who had terrific convulsions until she was relieved of a tape-worm Another occurred in a young man, who had convulsions for two or three years, and who was the victim of obstinate constipation He had no attacks after his constipation was relieved There are a few instances in which this condition is a result of Bright's disease, I am satisfied, though, that the reverse is true, that is, cases that are supposed to be due to Bright's disease are actually cases of epilepsy An examination of the urine is important in these cases in order to settle any question It is rare, but it does occasionally happen, that toxic substances and diabetes also may produce convulsive seizures of this kind

Dr **Allen A Jones**—This paper is one of great importance and calls to mind some cases that I have had in which there has been not only the probability of auto intoxication but occasionally a condition which gives rise to irritation of the stomach and to reflex disturbances One case that I now have under my care and observation is that of a boy aged 9, who had numerous convulsive seizures before I saw him. After going over the case carefully and eliminating some of the factors which might cause the convulsive seizures, I finally found a gastric catarrh with hyperchlorhydria, with gastric dilatation. After finding these conditions and placing the boy upon a restricted diet, and instructing the parents that the boy should not be allowed to bolt his food, and giving the patient HCl after meals and otherwise giving directions as to the hygienic living of the child, the convulsions diminished in intensity and frequency until now, fourteen or sixteen weeks have passed, there is only the slightest evidence of disease I never had a chance to see the case in a convulsive seizure I am satisfied, however, that the boy should be classed as one having had epilepsy He should be watched for several years

Dr **Simme** of Kentucky—I should like to state in confirmation of Dr Bond's paper, that 95 per cent of the cases of epilepsy, whether petit mal or grand mal coming under observation have been from reflexes from alimentary causes This is true whether it occurs in infancy, childhood or in adults Consequently I take the position that in the majority of cases the best remedy should be the regulating of the diet in regard to quality and quantity

Dr **Anders** of Philadelphia—If I understood Dr Bond correctly he advises against the use of bromids in the treatment of epilepsy In cases connected with certain causal factors it would be proper to drop the bromids and direct attention to the removal of the cause In cases where the gastro intestinal canal is disturbed, the question then might come up if it would not be better to treat the case in another way Cases may occur in your practice in which the bromids are tolerated, where there is not the slightest evidence of gastro-intestinal disturbance, here it is certainly the first duty of the physician to continue the use of the bromids as the best means to ameliorate the attacks and the frequency of occurrence

Dr **West** of Galveston, Texas—I understood the gentleman from Kentucky to say that 95 per cent. of the cases of epilepsy were due to gastro-intestinal irritation, if that be the case why should so many of these cases be absolutely incurable?

Dr **Allen A Jones** of Buffalo—I should like to ask Dr Bond the conditions of the eyes in the cases he reported

Dr **Robinson** of Illinois—I am much pleased to hear the paper read It has been my experience that the diagnosis of epilepsy in children is not always easy, it is often very difficult, because we find so many convulsive seizures in children that are not epileptic Last winter I was called to see a child, six weeks old, and could not determine the cause of the child's convulsions A careful examination was made and I could give no reason for the seizures until I found small boils or abscesses upon the head of the child I came to the conclusion that the child was pyemic, the abscesses upon the child's head had existed since birth and the blood was poisoned The treatment directed to that condition was followed by recovery The convulsions in this case were probably due to toxemia

Dr **Bond** of Richmond, Ind—Four cases were presented with relief of the particular cause and it was shown that they do as well without bromids, if attention be directed to the alimentary canal by eliminating the products known to be in the canal These cases do better without the bromids

Of course there are many gentlemen who attend cases in childhood who see many cases due to various causes which are not epileptic in any sense of the word Every one knows what cortical disturbances are, patients come to you with a history of having had epileptic seizures for a long time As soon as the trouble is removed the patient recovers

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ON NATURE'S CURE OF PHTHISIS AND AN EFFORT TO IMITATE IT

Presented to the Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association held at Denver, Colo , June 7 10, 1898

BY JAMES T WHITTAKER, M D

CINCINNATI

Schlenker made a complete autopsy of 100 bodies of adults and children, subjecting the lungs, especially the apices, to thorough scrutiny, and examining minutely the mesenteric, bronchial and cervical glands Of the 100 bodies, 66 were found to be tuberculous, and of these cases tuberculosis was the cause of death in 53 per cent, was of great importance in 6 per cent, and was latent in 41 per cent of cases These numbers are minimal because the examination was macroscopic, not microscopic, and because, even with the most critical examination by a special expert, concealed depots can be overlooked A true estimate of the frequency of this infection can be derived only from tests with tuberculin In this way, Kossel, one of Koch's assistants, who has d[illegible] him [illegible] especiall to the study of tuberculin under Koch's personal direction, found that 2459 children at the Berlin Dispensary, tested as they came, reacted to the old tuberculin. Tuberculosis was evident in but four of these cases, in all the rest it was latent. The conclusion was that 40 per cent of city children secrete tuberculosis in some part of the body. This test has already raised the ratio in cattle in various places from 15 per cent to 40 per cent. No pathologist of repute will dispute the assertion that tuberculosis is present in two thirds of mankind.

It is universally conceded that two sevenths of mankind succumb to tuberculosis of the lungs alone. Including cases of intestinal, bone, joint and gland infection, it would be perfectly safe to raise the limit that minute amount which would bring the fraction to two sixths. We will say, therefore, to be within the limits of perfect safety, that two-thirds of mankind are affected with tuberculosis and one-third dies of the disease. Therefore, in one-half of all the cases recovery is complete, or the disease is reduced to such quiescence as to become practically non-existent.

What is the process of cure in these cases? Nearly all the cases which have the benefit of altitude recover. There is something in altitude which in the first place gives immunity and in the second place arrests the progress of the disease. Individual cases recover also in all other regions of the earth, under all climates, with every kind of treatment, and under every variety of surrounding circumstances. There are conditions, therefore, under which patients affected with tuberculosis *must* recover, and others under which they *may* recover from the disease. What factors peculiar to altitude or common to all places may be adduced to account for these recoveries? An autopsy reveals in the cases the presence of adhesions, of nodules, of cicatrices and cirrhotic induration. The natural processes of cure would seem to be initiated, 1, by means which in some chemical way destroy the tubercle bacillus directly, as by the action of toxins or antitoxins, or 2, indirectly by sterilizing, immunizing or invigorating the soil.

Notwithstanding the great resistance of the tubercle bacillus, chlorin, carbolic acid, corrosive sublimate, the cyanides, and many other agents of great bactericidal power, destroy or inhibit the growth of the tubercle bacillus in various culture soils. None of these agents, however, is found natural in the body, therefore, they need not be considered here.

But we must bear in mind that phthisis or tuberculosis pulmonary as we see it, is not a simple, but is a mixed infection, whereby toxins are intensified through symbiosis. Certain micro organisms antagonize, others intensify each other. The engrafting of the streptococcus pyogenes upon the tubercle bacillus produces toxins of higher degree of virulence than belong to either alone. One of the most essential factors in the treatment of tuberculosis is the prevention of mixed infection, especially with the streptococcus.

CREOSOTE

Do we get any light as to natural processes from, or any successes with drugs? Creosote is the only drug which has held its place in the treatment of phthisis. Does it sterilize the soil and is there any such substance produced in nature? Unfortunately there is no good working theory to explain the action of creosote. Summerbrodt admits that a scientific explanation is still lacking, but maintains that creosote alters the chemical properties of the juices of the body so that they no longer furnish a suitable soil for the tubercle bacilli, the colonies of which will not grow in it. Ludwig claims that creosote destroys the toxin of the tubercle bacillus, and Peter ascribes its virtue to the substitution of a curable hyperemia for a tuberculous hyperemia. Guttmann found that in a solution of 1:4000 creosote exercises a marked inhibitory action on the growth of tubercle bacilli. It is certain that creosote in the dose in which it can be administered has no direct influence on the tubercle bacillus or on the streptococcus.

Cornet showed that the introduction of large quantities of creosote in the stomach did not prevent the development of the tubercle bacillus in guinea pigs. In the proportion of 1:100 it fails, after 24 hours' exposure, to destroy the tubercle bacillus in sputum. Sternberg found that a saturated aqueous solution does not destroy the tubercle bacillus in cultures in 12 hours. Trudeau observes that rabbits inoculated with tuberculosis and treated with creosote subcutaneously present the same lesions as control animals not so treated. Nevertheless the virtue of creosote is undeniable. It is admitted on all sides that creosote destroys all organisms that induce fermentation in the stomach without affecting the processes of digestion, and the virtues of creosote have been ascribed to the improvement of nutrition which sets in in some cases surprisingly soon. The remedy acts best in largest dose immediately after meals. Perfectly pure creosote is entirely void of toxic properties.

What would seem to lend support to the view that creosote acts by improvement of nutrition is the superior virtue of the carbonate of creosote, the so-called creosotal, the least irritating to the stomach of all the preparations of creosote or guaiacol. Pure creosotal has a syrup like consistence and unless warmed is so thick as to drop with difficulty. As it is insoluble in water and only sparingly soluble in alcohol, it is best given in oil and milk. It exercises its best effects in doses of 40 to 60 drops dissolved in cod liver oil, or in warm weather suspended in half a glass of milk taken immediately after meals. My own experience confirms that of Gram, who finds after the use of large doses of creosotal a more rapid improvement in the general condition and of the local symptoms in a larger number of cases than after the creosote, and in a certain number where creosote fails. But as in the case of creosote itself, it may not be predicted in the individual case whether the effect will be good or not. As with tuberculin, it is necessary to try to find out. Neither creosotal nor creosote exercise any direct effect upon the streptomycosis, as neither agent will arrest or control acute hectic fever which depends upon an inundation by the streptococcus. Creosote may have some sterilizing properties, ill defined, but at the present time the conclusion is, subject to revision by enlargement, that creosote acts by improving the nutrition and thus invigorating the soil. We have no knowledge of any manufacture of creosote in the body.

TUBERCULIN

The only natural agents of which we have any knowledge that are known to exercise an inhibitive action upon the tubercle bacillus are some of its own products, to wit, the various so called tuberculins which have been extracted from culture soils. These agents, which constitute the most remarkable contribution to materia medica in modern times, give us the power of absolutely recognizing the disease in its very inception, and of nearly completely controlling it so long as the disease remains pure There is nothing so subtle in medicine Many obscure cases of failing health, of anemia, pleurisy, bone disease, are thus shown to be tuberculous, and tuberculin, further used in treatment, becomes a tonic in these cases of the very highest power I have myself never seen any danger in the reactions of tuberculin and have never seen in any case a general reaction as severe as that which attends every vaccination In either case extreme reactions are due to impurities, and it is interesting to know that the new tuberculin is now being prepared in solid form to obviate the evils of contamination Tuberculin is produced in the bodies of tuberculous patients It is present, for instance, in the fluid of pleurisy, which will give a reaction in guinea pigs Doubtless many cases are naturally cured in this way But for the most part the tuberculin is produced slowly and the body grows immune to it

ARTIFICIAL SCLEROSIS

Gross attempts at imitation of nature through the processes of cicatrization were made by Landerer with cinnamic acid and by Lannelongue with chlorid of zinc Landerer set himself to work to convert a tissue poor in blood vessels and showing a tendency to caseation into a tissue rich in blood vessels with a tendency to form granulations and cicatricial tissue After experimenting with a number of agents he found that cinnamic acid had the highest chemotactic properties, that is, that it would induce a migration of leucocytes into the necrotic tissue of tubercle This process, he declared, is followed by the penetration of the mass by young blood vessels, the formation of young connective tissue, with subsequent shrinkage and contraction In man there occurs also besides this shrinkage, calcification Of 50 cases treated in this way 58 per cent were reported cured, 20 per cent improved, 4 per cent unimproved, while only 9 per cent of the patients died Unfortunately, other experimenters failed to get such good results The latest effort to secure leucocytosis by the ingestion of various nucleins, enzymes, etc , find also only individual support

Lannelongue tried to induce sclerosis by the injections of the chlorid of zinc, finding after the introduction of this remedy an afflux of new tissue elements which infiltrated the periphery of the tuberculous mass, penetrated it somewhat and surrounded it with a fibrous wall which isolates the diseased tissue These experiments fail, however, for the same reason as the surgical They overlook the seat and center of the disease in the bronchial glands whence new colonies issue for new invasions of the soils

EXPOSURE

Nothing in art approaches the efficacy of nature in controlling tuberculosis of the peritoneum by exposure of that structure to the external air Many theories have been proposed to account for the really wonderful results which followed this accidental discovery But of all the theories offered, nothing is more satisfactory than the simple exposure to light and air Many of the cases of typhlitis so happily controlled by simple incision are cases, not of appendicitis at all, but of tuberculosis of the peritoneum Appendicitis is not as common as measles or mumps, as some of the surgeons seem to think, but tuberculosis is

CARBONIC ACID

An attempt at imitation of nature consisted in producing hyperemia in order to secure the effects of carbonic acid gas As Traube showed long ago, patients affected with disease of the heart attended by hyperemia of the lungs enjoy a certain immunity to tuberculosis, as do also individuals affected with emphysema Rokitansky had remarked before upon the exemption from phthisis secured by certain forms of heart disease Patients with deformed thoraces, hunch backs, are also largely exempt from tuberculosis of the lungs, not on account of the limited expansion of the chest, but because the same amount of carbonic acid gas is distributed over a smaller surface Workers about lime ovens are said to enjoy the same immunity for the same reason Traube therefore proposed to treat the disease by developing carbonic acid gas in the stomach with hydrochloric acid and bicarbonate of soda It will be remembered that Bergeon, at a much later date, attempted to secure the same effect by the injection of sulphuretted hydrogen gas into the intestine Both observers reported good results, which, however, were not subsequently sustained The latest application of this treatment is the method of Bier, which consists in inducing artificial hyperemia about tuberculous bone and joint disease by the application of an incomplete Esmarch bandage But this method acts only temporarily and only in individual cases

ALTITUDE

Is there anything which acts in all cases? There is universal testimony to the effect that altitude actually cures phthisis It is accepted, in fact, that climate, meaning for the most part the climate of altitudes, is a remedy so powerful as, if practicable in every case, to render superfluous every other treatment We may ask ourselves, therefore, what are the peculiarities of the climate which control phthisis?

Altitude acts in various ways First, by dryness High air is dry air, and dryness is inimical to the growth of the tubercle bacillus Second, by cold On the average the temperature falls about 3 degrees for each 1000 feet of elevation Cold favors dryness It is also a stimulus It increases the tendency to sleep, exemplified best in states of hibernation, during which there is little waste Third, by sunshine Tubercle bacilli are killed under an exposure to direct sunlight in a period varying from a few minutes to a few hours, according to the thickness of the layer exposed, and by ordinary diffuse daylight in six to seven days It would appear from the analogies of photography as if the germicidal action of light is due to the increased oxidation Fourth, by increase in the quantity of ozone, the natural purifier, which has in the minutest quantities enormous bactericidal effect Fifth, by purity, as the air becomes more and more free of organic matter, including bacteria, as we ascend Miquel found the air of Paris to contain 55,000 bacteria to every ten cubic meters These bacteria decreased steadily with altitude until at the height of two and one half miles they disappeared entirely Sixth, by rarefaction, which is the most important factor of all The air grows lighter and thinner as we ascend, until at the elevation of Potosi, Bolivia, 13,300 feet, it is only one sixth as dense as at the sea The rarefaction of the air leads to increased exercise of the heart and lungs and thus to continuous, even though unconscious, gymnastics The dyspnea, palpitation, vertigo, which attack the mountain climber, the cyanosis and unconsciousness experienced by the aeronaut at still greater heights, depend upon insufficient oxygenation of the blood

POLYCYTHEMIA

Now, as there is no elevation which man has ever attained in which the quantity of oxygen in the air is not more than sufficient for the wants of the body, it was for a long time difficult to account for these symptoms, which are sometimes embraced under the term "mountain sickness," in altitudes The explanation was finally found in the phenomena of pressure The blood corpuscles will take up oxygen only at a certain degree of pressure Any great variation from this degree is attended with difficulties which are sometimes serious Bert found that a pressure of fifteen atmospheres is fatal. On the other hand, the blood corpuscles will not take up enough oxygen under a greatly diminished pressure, and nature adjusts herself to this difficulty by increasing the number of blood corpuscles and diminishing their size The curious fact is observed, therefore, that as the flora differ at different altitudes, so do the number and size of the blood corpuscles It was Viault who first observed that the number of red blood corpuscles was increased one-half at the height of 14,000 feet in the Cordilleras This fact has since been abundantly confirmed, so that at the present time tables are constructed showing the number of blood corpuscles at different altitudes, ranging from 4,974,000 at Christiana, to 5,752,000 at Zurich, 1,373 feet, to nearly 6,000,000 at Reiboldsgrün, 2333 feet, to 7,000,000 at Arosa, 6000 feet, and to 8,000,000 at the Cordilleras in Peru, 14,640 feet

Here, now, is a clue which nature gives and which should be followed up The *specific value of altitude* is therefore not merely exposure to outdoor air and sunshine, though by the so-called out-door treatment or porch treatment we imitate the methods and secure the virtues of oxygenation and insolation in the greatest possible degree in low levels But the polycythemia is an accommodation to the lessened pressure, for the same increase in the number of blood corpuscles in animals may be artificially produced by confinement in a rarefied atmosphere Thus Raynaud put a rabbit under a bell glass jar, taking the precaution always to have two jars that the animal might be transferred from one to the other for the sake of cleanliness, *reducing the atmospheric pressure to an* equivalent of an elevation of 9500 feet The rabbit remained in this atmosphere a month and a half and came out fat and healthy Examination of the blood showed it had absorbed 21 c c oxygen, while its fellows at sea level had absorbed only 17 c c This capacity of greater absorption of oxygen was obtained in four weeks

May we imitate this process in the pneumatic cabinet? I made a number of experiments with men in this way, but obtained no favorable results whatever But the pneumatic cabinet may in no way compare with mountain climate In the first place, the stay must be necessarily short In the second place, the individual becomes contaminated by his own exhalations, as the enclosed chamber necessarily implies a defective ventilation The experiments made hitherto have shown no increase in the blood corpuscles or in the hemaglobin and still less that increase in strength which develops so rapidly in the mountain climate

As the virtue of the mountain climate under a combination of all the factors found in altitude seems to depend chiefly upon the increase in the number of blood corpuscles, it occurred to me to try to secure this increase in a more direct way

TRANSFUSION

The transfusion of blood is as old as the history of medicine Such extravagant ideas are entertained regarding the value of it as to have led to its abuse and abandonment altogether But transfusion is one of those things that will keep coming up It has been revived from time to time with various improvements in the method of use, but has become practically limited in our day to the treatment of hemorrhage and to poisoning by certain gases Thus Stocker mentions the fact that the introduction of défibrinated human blood succeeded in rescuing a case, after artificial respiration, fresh air and Faradization of the phrenic nerve had remained without effect The writer once succeeded in the same way in recovering a patient who had been bled *ad deliquum animi* under the hemorrhage from gastric ulcer Arm to arm transfusion, as by the direct method of Aveling or by the indirect method of v Ziemssen, by the aid of three syringes, has been rendered practicable in expert hands But transfusion by the amateur is not without danger, and on account of the difficulty of obtaining blood at the proper time, is limited in use Aside from the inevitable danger of coagulation, direct transfusion, even when most successfully practiced is sometimes followed by fever, which is looked upon as a sign of ferment intoxication (Heineke) Sometimes this ferment intoxication shows grave symptoms, bloody stools, tenesmus, even sudden death by asphyxia The occurrence of dyspnea or cyanosis should interrupt the process at once until these symptoms disappear

The difficulty, often insuperable, of obtaining the blood of man has led to the use of the blood of the lower animals But there could be no question of the direct injection of the blood of lower animals into the veins of man Landois showed long ago that heterogenous blood, that is strange blood, in the proportion of 20 per cent of the original mass causes death on the first and second day, while less than 10 per cent produces great weariness, diarrhea, dyspnea and a tendency to real hemorrhage, vomiting of blood, extravasations, bloody discolorations of the urine Ponfick finds that hemaglobinuria constantly occurs even after the injection of 1 per cent of strange blood into the vessels of the dog Landois demonstrated further that strange blood corpuscles act like foreign bodies and are rapidly destroyed The free hemaglobin colors the transudations and the urine, and forms cylinders in the urinary tubules, destroying the urinary secretion The horse and ass, the dog and fox, different varieties thus of the same species, may exchange blood and it is only the blood of distant animals that may be regarded as heterogeneous, lamb's blood, for instance, in dogs and man Von Recklinghausen reported a case of transfusion of lamb's blood in man followed by death in fourteen hours In this case there was an exquisite amyloid degeneration of the liver

In order to obviate these dangers v Ziemssen recommended the subcutaneous transfusion This author, who made a large number of experiments, found this method of value in the treatment of poison ing by gases and in certain chronic infections He got his best results however, in the treatment of scurvy and pernicious anemia The subcutaneous transfusion has the advantage of being entirely free from danger The blood thus introduced is speedily incorporated so that the blood corpuscles actually multiply under its use The method has however, the great disadvantage of being so painful as to necessitate the use of anesthesia, a fact which soon led to its speedy abandonment v. Ziemssen succeeded, however, in rapidly increasing the number of blood corpuscles in this way

All these experiments were made with defibrinated blood The blood was defibrinated both on account of the difficulty and dangers attending clot formation The great desideratum was to secure a heterogeneous blood which could be introduced into the body with all of its ingredients quickly, safely, and pleasantly In the ordinary process of defibrination the blood is stirred with rods and the coagulum, which contains the bulk of the corpuscles both red and white is removed But it was exactly the corpuscles which are wanted in the [illegible] the natural process of polycythemia It is the increase in the number of blood corpuscles in mountain [illegible] which enables animals in spite of the reduction of [illegible] pressure, to retain the oxygen of the blood in a [illegible] degree This process of acclimatization is [illegible] very rapid, the increase to the normal number of corpuscles being reached in two weeks

Although it was not to be expected that any [illegible] of heterogeneous blood or even of homogeneous blood could be bodily incorporated, it was fair to presume that the ingredients, especially the oxygen and the [illegible] hemaglobin might be absorbed I wanted to get also all the bactericidal properties of the blood [illegible] showed that fresh blood destroys numbers of bacilli [illegible] the serum more rapidly than the corpuscles [illegible] always seen that bacteria perish more slowly in the coagulum than in the serum It was desirable also to have the blood of the youngest animals [illegible] blood loses its power to destroy bacteria The immunity of sucklings may find its explanation in this way The blood is therefore its own disinfectant inside the body The increase in number of red blood corpuscles in animals increases the resistance and lessens the susceptibility to experimental inoculation of disease It had, in fact, long been established empirically that anemic people are more easily disposed to infection than others It was desirable also to increase the number of leucocytes The process of leucocytosis marks a period of crisis by the liberation of antitoxins The bactericidal property of the blood which resides chiefly in the serum is derived from the white blood corpuscles, in whose cells according to Gärtner, all microbicidal power slumbers The dissolution of the white blood corpuscles under the action of bacteria liberates the antitoxin which destroys the bacteria This bactericidal power is therefore weakened by hydremia, anemia, chlorosis and hemorrhage, so that the victims of these diseases, or puerperal women who have lost blood, are more disposed to infectious diseases and suffer elevation of temperature under slighter injury Richter-Lowy finds that the introduction of agents into the blood which produce a hyperleucocytosis, such as peptones cinnamic acid, or spermin, fortifies or protects the individual against infectious diseases, that is, that the increase in the leucocytes brings about a cure in cases in which [illegible]

[illegible] an oiled glass rod

The most curious [illegible] Haycraft [illegible] only rarely to be ascribed to the hemorrhagic diathesis, but is much more frequently produced by the peculiar principle found in the front part of the body and secreted in the mouth of the leech After the injection of the extract of the leech into a vein the blood which flows from the carotid artery coagulates only very slowly at the end of an hour At a still later period the coagulability of the blood becomes more normal because the substance which prevented coagulation escapes through the urine Landois extracted this principle as a clear, slightly alkaline fluid and experimented with it on a large scale The extract of the leech head does not injure the red blood-corpuscles, and it has been proposed to utilize the solution in small quantities in the prevention of thrombosis v Sahli, and associated with him, Aguet, showed that the thrombi usually formed by foreign bodies introduced into the circulation are hindered in their formation by the extract of leech The possibility of utilizing this serum, especially in heart disease in which there are thrombi and infarctions, will depend upon further experiments upon animals The exact nature of this principle is not established, though it is known not to be a ferment, as boiling does not destroy it Thepoison of snake bites, especially that of the viper, contains the same principle

The bite of many poisonous snakes, with the exception of the cobra, induces a permanent fluidity of the blood The blood serum of different varieties of eels (Muränen), according to Mosso, 1888, delays or prevents the coagulation of the blood of warm-blooded animals Snake bites poison the blood, while leech bites do not hurt it The leech extract destroys the fibrin ferment without perceptible alteration of the blood, and the injection of it into the veins of a living animal stops coagulability without producing a toxemia Anything like a long duration of the effect is hindered by the fact that the substance is speedily eliminated by the kidneys

Leeches are sold with us at the rate of twenty cents each Although the amount of material furnished by a single leech would prevent the coagulation of a considerable amount of blood (I have not yet determined the exact amount), the expense of securing leeches for copious or frequently repeated transfusion would prove an obstacle to their use It is probable that if equally effective means had not been found, a larger demand might have secured supply at cheaper rates

Various drugs and chemicals have the same effect Thus Horne found that the soluble salts of calcium, strontium or barium delay or prevent the coagulation of blood in the proportion of one half per cent Barium are stronger than strontium salts, and these than lime Chlorid of barium distinctly delays coagulation in the proportion of one-fourth per cent Chlorid of sodium, chlorid of calcium in 0 07 per cent and over, still more delay the coagulation of blood treated by the above mentioned salts It has long been known that oxalic acid and the oxalates prevent coagulation I have found in my observations that five grains of the sodium oxalate would prevent the coagulation of a pint of blood But oxalic acid is poisonous The sodium oxalate as prepared for me by Mr Fennel, contains oxalic acid in the proportion of 30 per cent The largest fatal dose of oxalic acid recorded by Taylor is sixty grains, so that this small quantity is not dangerous In fact, in my observations no unpleasant effects of any kind were ever observed after the use of the sodium oxalate I have been led to abandon this preparation, however, by the observation that the blood could be kept fluid by a number of agents, each of them constituents of the blood and therefore each of them articles of nutrition These various agents are in common language common salt, the bicarbonate of soda and the sugar of milk Thus a teaspoonful of common salt, two tablespoonfuls of soda and a tablespoonful of sugar of milk will keep a quart of blood fluid long enough for all practical purposes

ALKALESCENCE

The chlorid of sodium itself has a tendency to prevent coagulation It also distinctly favors the hemapoietic process The soda makes the blood additionally alkaline, and alkalinity favors additional bactericidal properties It also favors osmosis Alkalescence is one of the most important properties of the blood It diminishes in anemia and cachexia and increases with improvement The experiments of Calabrase showed that the alkalescence of the blood protects the body against the injurious effects of toxines Alkalescence is connected with leucocytosis Jacob holds it not improbable that the increase of alkalinity is due to a leucolysis Bonne believes that increase of alkalescence increases resistance to the poison of bacteria The alkalescence of the blood stands in close relation with carbonic acid gas Krauss showed in unison with others that a high acidity and a remarkably low alkalescence is found under a great reduction of the CO_2 contents of the blood The virtue of carbonic acid gas may find explanation in this way Fever reduces alkalescence Behring finds that the stronger alkalescence of the blood (corresponding to the greater amount of CO_2) of white rats furnishes immunity to milzbrand So everything which has a tendency to drive out the CO_2 or to fix it in combination, limits the bactericidal property of the blood Thus there is after all scientific basis for the carbonic acid saturation, and effervescent drinks are something more than merely grateful drinks to fever patients Krauss demonstrated that while the urine in health became alkaline after the exhibition of two to eight grams of bicarbonate of soda, alkalinity occurred in fever only after the exhibition of twenty to thirty grams

v Fodor found that the blood of rabbits has much stronger bactericidal properties after the injection of an alkali, and finally reached the result in his experiments that the organism reacts to certain pathogenic infections with rapid increase of alkalescence, which is followed by a greater or less reduction of it If the infection is fatal, this reduction is pronounced and progressive, if it is not fatal, or less marked, the alkalescence increases anew and may exceed the original degree, the animal becomes more resistant to the bacteria which caused the infection Neumann showed that an artificial reduction of the alkalinity of the blood lessened the resistance of the animals to infection, and Fodor demonstrated that the increase of alkalinity under the use of the mineral alkalies increased the resistance, so that it could be said that the degree of alkalescence in the blood destroys the susceptibility of animals to certain infections According to Poehl, artificial immunity which is carried to great height by successive inoculations after the method of Behring, finds its explanation in the artificially induced leucocytosis with a simultaneous increase of the alkalescence of the blood Fodor and Riggler in continuing their experiments showed that the alkalinity of various infections, including tuberculosis, increases under immunization, so that the alkaline co efficient of the blood serum stands in direct relation to the degree of protection Thus the degree of alkalescence has great practical value as showing the effect of the immunization, antitoxic treatment, etc , and as showing the power of the body to overcome infection Fatigue diminishes this alkalescence and renders the individual susceptible to infection Loewy and Richter showed also that the cooling of the body is attended by a simultaneous reduction of the leucocytes and of the alkalescence of the blood, and explain in this way the contraction of disease under what is called by the laity the process of "taking cold" What is more to the point with us at this time is the observation of Bonne, who found that the reduction of alkalescence under cold, remarked by Loewy and Richter, was attended with an increased coagulability of the blood The fulminant character of certain diseases has been ascribed to a constitutional reduction of alkalescence

Finally I added sugar, because the various sugars, especially the sugar of milk, all delay the process of coagulation Besides, the sugar of milk has high nutritive value and makes but little demand upon the digestive juices

The addition to fresh blood of salt, soda and sugar of milk adds nutritive principles, preserves the corpuscles, red and white, intensifies the alkalescence, prevents coagulation and prolongs the life of the blood Thus the first part of the question was solved

HOW TO INTRODUCE IT

The next problem, the method of introduction, which seemed to be the most difficult, turned out the most easy The nutritive properties of the blood are so well recognized as to be appreciated by the laity and it is the custom in some countries, especially in France, but also to some extent in our own country, much wider than is commonly believed, to drink blood fresh at the slaughter houses Sometimes patients stand in rows waiting their turn, cup in hand, as at mineral springs The drinking of blood, however, is nauseating to many people It is objectionable also because the blood coagulates in the stomach, forming a mass which may even fatally interfere with the action of the heart Blood ingested in this way has, in comparison with other equally nutritious food, no advantage, but on the contrary much disadvantage Recent studies go to show that the principles of blood are not disposed of in the stomach, but must be discharged into the intestine to be digested and absorbed

It occurred to me, therefore, to introduce the blood directly into the intestine, and after some slight experimentation it was found to be perfectly easy to inject large quantities of fluid blood high into the intestinal canal The injection may be made with the common fountain syringe or the bulb syringe, but is easiest and best effected by pouring it into the funnel and tube of the common stomach tube, which is easily pushed into the rectum to and beyond the sigmoid flexure If the fluid is now poured slowly, a large quantity of blood may be carried into the colon so that much of it will pass the ileo cecal valve to reach the small intestine This injection is much more bland and unirritating than the same amount of water, and is easily retained by all patients in the absence of any ulceration or deep congestion of the rectum There is not the same desire therefore, to discharge the fluid as in the case of a similar amount of water, not so much even as attends the injection of the same amount of olive oil The injection is best taken at night with the patient lying upon the left side, and after the injection of it the patient should lie fifteen minutes further upon the back and fifteen minutes upon the right side, that the fluid may find its way throughout the colon

I direct my patients to add a teaspoonful of salt, two tablespoonfuls of soda and a tablespoonful of sugar of milk to a pint of boiled water, and to pour one half of this quantity into a clean glass jar, requesting the butcher to add to it one pint of fresh calf's blood The fluid should be injected at once, or if this is not practicable, the jar should be put upon ice and the contents used within twelve hours In no case should the fluid be heated, as heating favors coagulation and dissolution of the blood This quantity should be introduced every night, in bad cases twice a day, morning and evening, and in all cases the bowel should be previously washed out with a simple injection of water As a rule, to which there are many exceptions, the blood is entirely absorbed, so that often not even a trace of it is found on irrigating the bowel on the following morning

The idea of using blood is so natural, the process is so simple and the results in many cases are so striking as to have led me to look up the literature to discover any former use of it in this way, and if so, the reason of its abandonment For in all the recent studies concerning nutritive enemata, no mention is made of the use of blood I find in the literature that Andrew H Smith, of New York, first suggested and reported the use of *defibrinated* blood, in the *New York Medical Journal*, 1878, and that further reports were made in the Proceedings of the Therapeutic Society of New York and the New York Archives of Medicine of the same year I learn further that A Earnest Sanson made a report upon the use of blood clysters after the method of Andrew H Smith, in the *London Lancet*, February, 1881 These were the first therapeutic suggestions The report of Smith is based upon sixty-three cases, including thirty-eight of tuberculosis In eight of these cases the blood could not be tolerated on account of irritability of the rectum or colicky pains Ten cases remained uninfluenced by the treatment, or the improvement which showed itself had begun before the use of it In twenty cases the good effect was distinct and was marked by increase of appetite and speedy disappearance of night sweats and diarrhea, lessening of cough, and especially by gain in weight This treatment, however, was carried on in connection with the use of cod liver oil, brandy, expectorants and various remedies in address to the different symptoms Nevertheless, distinct advantage could be ascribed to the injections, as after interruption of them the patient grew worse, but on resumption of them began immediately to improve and gain in weight

The most striking results were obtained in cases of great impoverishment of blood Eight cases of anemia of high degree were entirely cured Five cases of dyspepsia from various causes experienced great improvement and were finally cured, including one of chronic asthma Two cases of exhaustion were markedly benefited, one after fistula and one after dysentery One case of uncontrollable vomiting from ulcer of the stomach entered the hospital unconscious and apparently moribund Clysters were given of pure blood while brandy and milk were given internally The patient recovered consciousness completely on the next day, was soon able to take food into the stomach and left the hospital cured in five weeks The conclusion was that nourishment could be introduced in this way better than in any other, and that there was no danger in the method, though continued for weeks

Hanks reported a case in which a patient who suffered from uncontrollable vomiting after hemorrhage from the uterus, was sustained by blood clysters until the stomach could retain its nutrition, Brown, a case of paralysis with threatening inanition in a child aged two years, in whom clysters of dried ox blood were used and perfect recovery was accomplished Sansom reported two cases, one of gastralgia in a boy who could take no food, in whom there was retention of urine, blood and pus in the urine, inflammation of the ureter, probably from oxalic acid stone This patient received four ounces of blood, at first once a day and later twice, gaining gradually in weight as the stomach recovered its tone Another case of gastrectasia marked by extensive purpura, violent pain, vomiting and great anemia was recovered under the use of blood clysters twice a day, improvement beginning as early as the third day

Möller in his report in the *Deutsche Med Woch*, Vol vii, pages 45 and 46, communicates the experiments made by Mosler in the Griefswald Medical Clinic He showed that while a part of the blood was rejected, a certain quantity was always absorbed A woman aged 55, suffering with chronic enteritis, marked by great anemia, received every day for four weeks injections of five ounces of blood, the condition improving continuously The number of blood corpuscles increased from 1,804,000 to 1,865,000 A second patient, who had twice suffered an attack of pneumonia, was now affected with extreme anemia from frequent nose bleed and hemorrhage from the bowels This patient, edematous about the legs and face with enlargement of the liver and albuminous urine, showed all the symptoms of anemia of the brain Blood clysters, five ounces, were injected daily, the weight increasing from 119 to 124 pounds, the blood corpuscles from 960,000 to 1,136,000 Although in a third case the nutrition was sustained entirely in this way for one week, it did not seem to be determined that life could be supported indefinitely by these injections

The experiments of Mosler were made with swine's blood, those of Smith, Sansom and others with ox blood It will be seen that these observations and experiments were quite different from my own In all cases the quantity was small, four to six ounces, and in all cases the blood was defibrinated I used blood with all its ingredients and instead of subtracting from it by the removal of any of its elements, I added to it principles of great nutritive value, salt, soda and sugar of milk, which served also the additional purpose of increasing the alkalinity, preventing coagulation, facilitating absorption, and above all things, prolonging the life of the blood Further, the quantity which I used was four to six times as great as in previous observations, the easy retention of the larger amount in the great majority of cases being due to the blander character and to the deeper introduction of the nutritive fluid

In my experiments I have lost a good deal of time in determining the best agents for preventing coagulation, so that I am able to report upon but twelve cases of phthisis and one of apparently pernicious anemia I make this statement, therefore, only as a preliminary report In two of the cases there was considerable difficulty at first in retaining the fluid In all the rest the blood was held without effort The patients without fever or with but slight fever showed a continuous gain in weight, but patients with high fever showed no improvement, and in one case of severe hemoptysis, under the charge of my assistant, Dr Malsbary, the number and frequency of the hemorrhages remained uninfluenced In fact, the fear was entertained that the injection of blood sustained the hemorrhages, but no improvement followed cessation of their use The most decided change was seen in the cases of anemia, one of which—a seemingly fatal case of apparently pernicious form—after failure with iron, arsenic, and later mercury, gained twenty pounds in three weeks under the blood clysters alone

The cases of phthisis marked by anemia were the most benefited and the most rapidly, registering gains in several cases of two to three pounds a week The bactericidal virtues I had hoped to secure were by no means so pronounced, but the gain in nutrition fully equaled expectation I can commend these blood clysters as far exceeding in nutritive value any other as yet devised. They are also, as a rule, better borne

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SOME USUALLY OVERLOOKED PHYSICAL SIGNS AND SYMPTOMS IN CHEST DISEASES

Presented to the Section on the Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association held at Denver, Colo , June 7-10, 1898

BY NORMAN BRIDGE, A M , M D
LOS ANGELES CAL

The tendency of the mind of the young doctor, and some times of the older one, is to look for the classical and typical changes in all chest diseases He knows well what ideal bronchial breathing is, what râles are and the different sorts, what pectoriloquy, egophony, amphoric sounds and metallic tinkling mean He knows flatness on percussion and dulness when marked, and cracked-pot percussion sound with open-mouth breathing And if these or a combination of them are found in any case, diagnosis is supposed to be thereby relatively easy

In our early studies we learn to look for these signs, and are disappointed sometimes when the symptoms have led us to expect to find them and we do not find them Failing to discover them we sometimes wholly fail to detect other ample physical signs, that are however less prominent and pronounced The descriptions in the text-books have given us these and similar classical signs as they are found in their perfection, and we are liable to dwell on them so fully that anything short of their ideal manifestation we pass over and hardly notice This is one of the faults of our usual method of study which is to consider the sick from the standpoint of the classical description of the different diseases, and try to find the right picture to fit each case, rather than from the clinical standpoint of the symptoms and signs which the patients as they come to us actually have

In certain lung diseases, notably tuberculosis, it is of the greatest moment to be able to make an early diagnosis Many a patient, who must otherwise die, could be helped if the diagnosis were made early, and before the different or any of the classical physical signs are completely developed To do this we must invoke several aids and tests not usually thought of We must learn to detect slight changes from the normal conditions, the first intimation of those variations of sounds in auscultation and percussion that progressively develop into classical signs The doctor who examines his cases critically sees forty-fold more of them having these slight changes, than of those which show the ideal signs

Pulmonary tuberculosis, fortunately for this study, is usually unilateral at beginning, and so we have early a normal side of the body for comparison By examining the two sides critically, and comparing them with each other repeatedly, it is often possible very early to detect alterations that point unmistakably to lesions that are progressing We perhaps find on one side a slight lessening of the force and loudness of the vesicular murmur on inspiration Or there is a slight increase in expiratory sound at first without a particle of the quality known as tubular Can we hear the expiratory sound better on one side than on the other? If so, there is an abnormal condition in one lung, either where the sound is louder or softer, of course always making allowance for the slight disparity in sounds between the two apices Later, if the change progresses actual tubular breathing may be heard, at first with so little of the tubular quality that it can barely be perceived

The two sides should be gone over everywhere carefully, and corresponding points of the two critically compared, to see if any anatomic region can be found where there is even a slight difference between them in *a*, length of the inspiratory sound, *b*, intensity of the normal vesicular quality of that sound, *c*, length of the expiratory sound, *d*, intensity of this sound and the elevation of its pitch above what is normal, *e*, vocal fremitus on the uttering of words that cause an extreme degree of vibration, as *ninety-nine*, and *f*, the transmission to the auscultating ear of the ordinary voice and soft whisper Râles should be searched for in deep inspiration with profound expiration and on voluntary coughing Tuberculosis usually begins in a circumscribed region of one lung, and is often first seated in the bronchial mucous membrane If there is any tendency to recovery, any conservative power, it soon causes a deposit of adventitious fibrous tissue (fibrosis) through contiguous lung tissue, which invariably changes the physical signs and in the way indicated, only a slight change being perceptible at first and the signs being most changed nearest the focus of the disease, and shading off toward normal sounds farther away

Finding any of these slight changes we should carry our comparison of the two sides to other regions, all over the lungs, and find where they are most evident That will be nearest to the focus of the tuberculosis if this disease is present If a deposit exists in an apex, fibrosis will spread from that point The back is the best region for comparison of the two sides Listening over the lower zone of the lungs posteriorly the sounds are absolutely alike and normal on the two sides, as we rise step by step, listening over every half-inch vertically and changing the stethoscope repeatedly from one side to the other we soon strike a zone, perhaps at the lower angles of the scapulæ, where we can barely perceive that on one side the vesicular murmur on inspiration is a trifle less pronounced and the expiratory sound perhaps a trifle more so and longer than on the opposite side at the corresponding point One inch higher up this disparity is, while apparently not more marked, yet slightly more perceptible, which means that it must be more marked Above this level the difference is progressively greater, the vesicular murmur is, as we ascend, growing less and the expiratory sound greater, louder, longer and stronger, and soon higher in pitch Perhaps near the spine of the scapula the expiratory sound is longer than the inspiratory, and is definitely tubular and has a pitch perhaps as high as the inspiratory sound Over the seat of the deposit, if the bronchi are not closed by phlegm or otherwise, this tubular breathing is most striking, and is ideal if the deposit is extreme, at the same time the vesicular murmur on inspiration may be nearly gone But if the deposit or thickening of the connective tissue is slight, the most pronounced change in the sounds does not reach an entire ablation of the vesicular murmur on inspiration, nor is there any ideal bronchial breathing, but only a slight increase in the loudness and length of the expiratory sound

As the expiratory sound increases in loudness and rises in pitch there is always, other things being equal, a corresponding increase in the vocal fremitus over the region, as well as in the transmission through the chest wall of the voice in phonation and whisper With patulous tubes these sounds increase in loudness if not always in distinctness, as the solid substance of the breathing organ increases in mass For the interest of the patient it is in cases of just such slight alteration as here indicated that the signs are of paramount importance, that is, mainly in cases of incipient phthisis This careful method of auscultation from side to side and the testing of the fremitus and voice transmission, should be made in all cases where there is a particle of question as to some disease of a lung

Many things beside tuberculosis may cause a slight disparity between the two sides of the chest, and pleuritis is one of them and rather a common one If the difference between the two sides is slight and uniform over the whole of both lungs at the back, and there are no other signs, then a former pleuritis is probably the cause The disease may have occurred many years before, producing slight changes in the superficial portions of the lung, probably in the shape of permanent thickening of the connective tissue, whereby the vesicular murmur is a little reduced on inspiration and the expiratory sound is prolonged The thickened tissue of a cured tuberculosis makes disparity of sounds between the two sides, but not a uniform one, the difference is greatest over the lesion

In many cases of considerably advanced phthisis the physical signs are markedly reduced, especially the râles, by deep inspirations and failure to expire freely The result of this is a dilatation of the bronchi and lung tissue to such a degree that the moving air does not disturb the phlegm to cause râles, and the otherwise marked bronchial breathing is nearly abolished In a few incipient and slight cases this trick of many patients is quite enough to hide all the s[illegible] Patients must sometimes be taught and induce[illegible] expire profoundly to ena[illegible] [illegible]t fine ral bronchi of only moderate size It is an impulse of many patients to make the chest large for the doctor to listen to, it is either an act of politeness or to show themselves at their best They first increase the lung air contents enormously by expansion, then take in and expel but little air with each respiratory act, so that the residual air is greatly increased and the bronchi are distended, and the phlegm that lines them is not disturbed and so no râles result Let a full expiration be made and râles at once appear Failure to resort to this maneuver has several times caused an early diagnosis, that was perfectly possible, to be missed in a case of incipient phthisis confined mostly to the bronchi Nor should one trial of this measure be regarded as sufficient in a doubtful case, but repeated similar tests should be made

The diagnostic value of extreme expiration is not confined to the production of râles by the undisturbed flow of air through the narrowed air channels Sometimes if the patient will voluntarily cough at the end of such an expiration râles will be most unexpectedly brought out that could not occur without it This test should always be attempted in a doubtful case The explosive blast of air may under forced expiration easily move some phlegm, creating a sound audible to the auscultator when no amount of deep breathing could produce it

The limit of possible expiration should be secured, with open mouth breathing in making the test with the fingers or a soft hammer for cracked-pot percussion sound This will often produce it to a slight degree when it could not otherwise be developed I do not undertake to say amidst the doubt on this point, just what a slight cracked pot sound always means in disease of a lung, but when it can be produced on one side only, and especially in conjunction with slight râles, even if both are made possible by the maneuver referred to, it certainly denotes some disease of the part, and that in beginning cases is important

The average patient does not know how to make profound expiration Tell one to do this and he will at first as likely take a deep *inspiration* The human mind, save in the susceptible and very teachable and adaptive years, can not do a new sort of muscular evolution off-hand on simply being bid to do it One must be taught Profound expiration is such an act, open mouth, normal breathing is another, and in our efforts at teaching them people are as amusing as they are in that other experience of doctors with them, when bed-patients are asked to turn over on their backs Fully ninety-nine per cent of them will turn themselves prone with their backs uppermost, or start to do it, before they discover their mistake

In a lung with beginning tubercular deposit in the upper part near the larger bronchi, the vesicular murmur is sometimes lessened over almost the whole lung, except the part that lies directly above the deposit, and there is very little expiratory sound with little of the tubular quality and few or no râles, while the vocal fremitus is still moderate in degree and the percussion resonance is nearly normal, but there is reduced transmission of voice sounds There seems no way of explaining such a state of things but by assuming a complete closure of some of the bronchi, by pressure from without or by thickening of their walls or by thick phlegm within them For the lungs are full of air as shown by the resonance on percussion, there can be no great consolidation, and if tubes are only partially closed there is sure to be râles of some sort, and usually many of them

Early in most cases of unilateral, localized tuberculosis, some aid to diagnosis may be found in the symptom, usually neglected, of greater cough during recumbency on the affected side If there is much phlegm having a fair degree of fluidity, and the local seat of its formation does not reach to the lateral periphery of the lung, and usually in the beginning it does not, it is sure, when the patient lies on the bad side, to run down into the smaller bronchi by gravity and provoke cough If he lies on the opposite side gravity carries the product into progressively larger tubes where it can spread out, its bulk lessened by drying, and adhere to the tube-walls without causing much cough often for many hours, even to the limit of a night In the morning the activity of the patient and perhaps the taking of food and drink, induce a paroxysm or two of cough and the mucoid accumulations of the night are expelled As soon as the lesion extends to the lateral periphery of the lung, or if it should happen to begin there, so that its tubes and perhaps its air vesicles are full of fluid this test will fail But it must be rare that for this reason it would fail in an incipient case, it more often fails from the paucity of the secretion It is not at all unusual for this symptom to be pronounced early in a case and exactly the reverse symptom be present later when the air channels of the periphery of the affected lung become full of muco pus, and on rational grounds this is what we should expect The cough then is least when lying on the diseased side

A striking tendency to error in considering chest signs is shown in cases of fluid in the pleural cavity in little children In a considerable majority of instances this condition is at first overlooked, as it is often missed throughout the whole sickness This error is not confined to young doctors but comes often enough to veterans It comes probably of the double mistake of supposing that the physical signs in children and adults are the same with given pathologic conditions, and in taking too literally in diagnosis certain rules which have grown into the literature and seem altogether rational, but which are unreliable and lead to many pitiable blunders

Dulness on percussion is a sign in pleural effusions, but in small children there is little or no dulness over the lower part of the chest, especially on the left side, the gas in stomach and bowels almost completely masks this sign If the pleural cavity is full to the very apex there is dulness, even flatness at the top, which by absence of dulness low down often leads to the erroneous theory of apical consolidation of the lung

The books say, and it is a fatally false guide, that the intercostal spaces bulge They do when the pleura is tense nearly to bursting, once in a hundred cases, not more Why should such a misleading statement be perpetuated through generations of writings! Why not have said that the intercostal spaces are less de-depressible and more firm, and been correct and consistent?

It is well understood that lung sounds are not much transmitted through fluid but over a child's pleural cavity full of fluid faint bronchial breathing is heard This fact, with the absence of bulging spaces, leads many doctors to dismiss the theory of fluid in the cavity, although vocal fremitus is absent or greatly reduced and the heart is beating far to the right or left of its normal position The change in the fremitus (if the bronchi are patulous) must mean fluid or air in the pleural sac, and the heart does not move without assistance, yet we ignore these facts because we hear bronchial sounds or distant murmur, fail to find dulness in the lower chest zone, and the intercostal spaces do not bulge

DISCUSSION

Dr E **Fletcher Ingals** of Chicago—The paper which has just been read has many points of interest to many physicians and I think they can not be insisted upon too strongly The majority of the points are familiar to most of us, but to the young physician particularly it is easy to point out discrepancies between actual facts and those laid down in the text-books It is especially important in the early stages of phthisis, where the disease is localized in the beginning There is a decided or a slight change from the normal if the disease is limited to a small portion of the lung and that is a grave sign We must remember that similar changes occur in bronchitis and, not infrequently, in pneumonia This should be taken into careful consideration before pronouncing diagnosis In comparing the two sides the statement that the back is better than the front does not correspond with my observations I understand perfectly well that we can get clearer sounds over the lower lobe of the lungs than elsewhere, but in comparing the two sides, in the majority of cases, you can get better results in front than posteriorly You can count more upon the changes heard from in front There is a disparity between the two sides in 50 per cent. of the cases While the paper directs proper attention to the early signs, we should be especially careful that these early signs are not confounded with other signs which have nothing to do with tuberculosis. I see a large number of patients sent to me by other physicians where there has been an error in diagnosis in pronouncing the case one of tuberculosis I have seen many lamentable cases where the patients have been told that they had tuberculosis and they were made miserable for life and driven to an early grave I have in mind now two ladies, occupying high positions in society, who were condemned to die with tuberculosis, in neither case was there any tuberculosis

A sign not spoken of in the paper seems to me to be of greater importance every year, and that is the pulse A rapid pulse of 115 to 120 in a person otherwise well points pretty positively to tuberculosis Bronchial breathing is practically found in all patients suffering from pleurisy over the effusion, but not as continuously as over solid lung In the text-books the voice sounds are represented as being present over the fluid In not one out of fifty will you be able to get voice sounds over the fluid

Dr **James Tyson** of Philadelphia—Dr Bridge struck the keynote in speaking of pleurisy with effusion in the fact of diminished fremitus, which always means pleurisy with effusion There is however, one exception, which occurs in children with a purulent effusion as contrasted with serous effusion, sometimes there is an increase of fremitus This is said to be the case, although I have never realized that such was so

Dr C E **Edson** of Denver—I want to add to the remark made by Dr Tyson in regard to the rapidity of the pulse not only occurring in advanced cases, but in the incipient ones, the rapidity of the pulse is a sign which has made me very suspicious in many cases It is not only the rapid pulse which makes me suspicious, but also the irritable pulse It is the nervous irritable pulse of small caliber that makes me suspicious of the early stages This is not only a diagnostic sign but one of certain prognostic importance, particularly in cases in this high altitude It is a pulse which does not slow down in a reasonable space of time If the pulse continues to be irritable the cases do not do well in the long run

Dr **Beggs** of Denver—The paper is an extremely important one, especially to the younger members of our profession I remember one statement made ten years ago by Dr Glascow, of St Louis, Mo, which has always impressed me, it was that no man was capable of diagnosing incipient phthisis until he had examined one thousand chest cases What he meant was, the diagnosis of the early cases This diagnosis depends upon the alterations in the quality, and this is extremely hard for students—yes, medical men, too—to learn to recognize in the early stages I have found that statement to be true to a certain extent in my own experience I am not sure of my own ability to make an early diagnosis, although I have been practicing thirteen years In cases of incipient tuberculosis there is an inconstancy in the occurrence of vocal fremitus I have found many cases which have practically the same anatomic conditions present, in which the character of the vocal fremitus and resonance varies, and, even in the same patient this varies from time to time just sufficient to make vocal resonance a matter of doubt I also find that I must agree that the front of the chest is better for comparisons than the back

As regards pleurisy, I have in mind a case of a child 14 years of age, in whom the right pleural cavity was nearly filled with a serous effusion, as was proven by puncture, in this case there was no bulging, and the measurement of the chest showed no difference between the two sides And, so far as we could detect, there was no difference in volume in the two sides of the chest

There is another sign which has given me more trouble than any other, which is mentioned in most text-books, and that is the *muscularis sussurus*, this has been to me a source of error in making diagnosis This, too, is a sign that every student should have his attention called to

Dr **Bridge**—As I stated at the beginning of this paper, I intended to call attention to a few of the possibilities and likelihood of error in the diagnosis of chest diseases, particularly on the beginning of such diseases as phthisis I should have made mention of the errors which might occur on account of the muscular action, this is a source of error and great trouble to young practitioners in listening to chests, where particular care should be taken to place the muscular fibres of the chest wall at rest Here muscle tones are produced by contraction which would interfere with intra thoracic tones if one be not careful

It is possible that I did not make myself sufficiently well understood in speaking of comparing the two sides of the chest. In the beginning of phthisis at the apex, I have been better satisfied with an examination made from in front of the chest. Slight fibrosis begins above and extends downward, and frequently this fibrosis has so far extended as to interfere with the accuracy of this examination when made from in front Then, too, you do not have confused condition of the heart sounds as in front If you find that there is evidence of fibrosis extending below the fissure between the two lobes of the lung posteriorly, it is a very strong evidence that there is a lesion of considerable consequence existing above it Another point I wish to emphasize is that the patient should be made to expire profoundly I can mention many cases during the past two years where the diagnosis could not have been made of incipient phthisis without this fact being known

In answer to Dr Tyson I would simply say that I do not recall any instance where the tactile fremitus from the voice was greater over the accumulation of pus than over the opposite side

I am amused at the statement made that one should examine one thousand cases of chest diseases before one is capable of distinguishing the slightest changes that occur in incipient phthisis Practically that statement is true, though I do not believe that this is necessary

ANEURYSM OF THE CONCAVITY OF THE TRANSVERSE ARCH, APPEARING EXTERNALLY AS A LARGE TUMOR IN THE REGION OF THE HEART

Presented to the Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Colo, June 7-10, 1898.

BY H W McLAUTHLIN, M D, AND W N BEGGS, M D
DENVER, COLO

Charles M, aged 52 years, musician entered the Arapahoe County Hospital, Denver, March 9, 1898 His mother died of cancer, at the age of 70 years, and a sister of his mother died of phthisis He had been given to dissipation, contracting syphilis when about 20 years old, and he was addicted to drink He had contracted gonorrhea several times During the last fifteen years he had had some rheumatism He said his present trouble commenced four months before, with a bad cold acccompanied by a severe cough, at which time a swelling appeared in the left chest, which had gradually increased

The tumor had been tender and attended by shooting pains, moderate in character and confined chiefly to the region of the swelling About two months before entering the hospital he became short of breath and this had increased so that he could with difficulty move about He had coughed considerably and expectorated freely His appetite had continued good but he was inclined to diarrhea He had lost about twenty pounds in weight during the four months He had also had some difficulty in swallowing

Physical examination —Patient is of small stature and stoops He appears apathetic and weak His memory poor He answers the same questions differently at different times Scars, apparently syphilitic, are abundant on legs and back A tumor, the size of two large fists, on [illegible] side of the sternum, extends [illegible] rib to the upper border of the seventh rib, and laterally from the center of the sternum to the middle of the axillary region *The tumor is firm to touch*, but pulsates distinctly under the fingers, more especially at the base No distinct bruit is audible The position of the heart can not be determined, although the sounds are distinctly audible in the interscapular region and throughout the right side In the left axillary region, just below the tumor, a systolic murmur is audible, flatness exists over the whole chest The respiratory sounds are feeble and fremitus is absent, except in the upper part near the spine, where the breathing is bronchial with coarse râles The right side shows exaggerated respiration in spots, with moist râles, the last being more abundant in the lower back There is some edema about the ankles and the eyelids show distinct puffiness The pulse averaged about 90 per minute, respiration, 39 In the right radial artery pulsation is scarcely perceptible, in the left it is present but extremely weak Pulsation in the carotids is apparently equal There is no tracheal tugging The right pupil is larger than the left, the latter being smaller than normal, accompanied by some ptosis But convergent strabismus in the right eye, the patient claims, is of much longer standing than the tumor Slight hoarseness is present Urine analysis negative

He became progressively weaker His temperature varied from 96 to 100, being below normal more than half the time The tumor continued to enlarge perceptibly in every direction On March 26 it is noted as extending from the clavicle to within four inches of the lowest rib, and laterally from the posterior part of the left axillary space to a point two inches beyond the right border of the sternum The surface measurements were, vertical ten inches, transverse thirteen inches

Dr E J Rogers, the attending surgeon, saw the patient in consultation soon after his admission A number of other physicians, especially Drs Eskridge, Whitney and Sewall, made careful examinations Dr Rogers, by the exploring needle, withdrew a small amount of straw colored liquid from the left pleural cavity It was not, however, deemed wise to withdraw a considerable amount of fluid, although doubtless present, as it would tend to interfere with the established resistance hitherto offered to the advance of the tumor in certain directions About ten days before death a reddened appearance of the skin at the summit of the tumor was noticed, as if the skin were about to ulcerate A day or two later blood began to appear at this place, the most of it clotting as it appeared on the surface It continuously stained his clothes On several occasions he had requested the loan of a knife from neighboring patients, and he was put under more careful watching, as a mild delirium became manifest.

Early on the morning of March 28 he became quite suddenly and extremely distressed for breath He complained of severe pain but could not locate it He received temporary relief from one quarter grain of morphin, hypodermically, about six hours afterward he began struggling for breath, tearing at his throat and was unable to speak He conveyed the idea to those around him that his throat was closing up. There was apparently spasm of the larynx Respiration ceased about thirty minutes later

Postmortem examination by W N Beggs, M D, four hours after death It is the body of a middle aged, rather emaciated, man Rigor mortis is established and livories are present in the dependent (posterior) parts not subject to pressure The eyes are dulled Projecting from the left thorax is a large, almost hemispheric tumor It extends from the left anterior axillary line to one inch to the right of the sternum and from the clavicle to the seventh rib It is rather moderately firm to pressure Over the anterior surface, including the area of the nipple the skin is eroded and covered with dried, clotted blood for an irregular ovoidal space two by one and one half inches in dimensions In dissecting away the skin over the tumor it was found that as this eroded area was approached the skin became progressively thinner, the subcutaneous tissue disappearing entirely and the cutis vera becoming so thin that although great care was used, it was impossible to avoid invading the tumor itself This having been done a very considerable amount of cruor was expelled and it was found that *the tumor was saccular communicating with the aorta* The eroded distal extremities of the second and third ribs extended into the cavity from the left and the fourth and fifth ribs were imbedded in the cavity, both being eroded, chiefly on the upper edges and under surfaces The left edge of the sternum was eroded to a depth of about one half inch, extending from the attachment of the second to the fourth ribs, the costal cartilages of which had entirely disappeared

The pericardial cavity was entirely obliterated by adhesions of slight degree of firmness, not entirely recent, however The heart, small, was turned to the right on its axis, the left ventricle turned toward the front The heart muscle was pale, flabby, rather friable, and of a uniform, diffuse, slightly yellowish cast Death had occurred in moderate diastole and all the cavities contained a slight amount of mixed blood clot The valves were normal The ascending and transverse portions of the arch of the aorta were considerably dilated and the inner surface was wrinkled and freely dotted with irregular, yellow, very slightly elevated patches (atheromatous) At the concavity of the arch, beginning one and one eighth inches above the upper margin of the semilunar valves, was the opening of the aneurysmal sac This was eight and one half inches in circumference The sac was directed first downward and forward, then forward and upward, compressing somewhat the left bronchus, although there were no traces of erosion therein Externally to the bony thoracic wall, the wall of the aneurysmal sac seemed to be composed of the soft parts of the thoracic wall

In the right pleural cavity there were numerous, firm, old adhesions throughout. The right lung presented no peculiarities except a slight amount of emphysema The left pleural cavity contained one and one half quarts of a clear amber colored fluid The left pleura was much thickened and opaque The left lung was very much compressed and consolidated, and contained no air, portions of it sinking in water On cut surface it was of bluish gray color, mottled with very many rounded and triangular shaped patches, slightly elevated above the cut surface, varying in color from gray to yellow and in consistency from moderately firm to almost semi fluid, the latter being characteristic of the yellow patches

The liver was of approximately normal size The upper surface was granular and covered with numerous shallow, richly stellate scars On the cut surface it was slightly granular, with distinct lobular markings, mottled dark bluish red and yellowish The splenic capsule was much thickened and opaque, white in color On the surface were a few shallow stellate scars Otherwise the spleen and the other organs not mentioned presented no peculiarities of special interest here

A peculiarity of this aneurysm is the location of the external tumor, the usual place being beneath the sternum, below the right or left clavicle or in the back A review of several authorities has failed to disclose so large an aneurysm, similarly situated In case No 150 in Hayden's work, the aneurysmal tumor extended from the level of the second to the eighth dorsal vertebra, occupying the position of the left scapula, which was displaced backward and outward It was hemispheric and measured nine inches in the transverse and fourteen in the vertical diameter

Differential diagnosis —What were the signs and symptoms during life favoring the diagnosis of aneurysm and what other diseases should have been considered? The age of the patient, the history, the signs of syphilis, together with a pulsating tumor of the chest and pressure symptoms would certainly strongly suggest thoracic aneurysm Yet the pulsation was nowhere strong, although toward the base a forcible and expansile pulsation was felt Da Costa's most emphatic sign, viz, the presence of "two points of pulsation in the chest, two hearts apparently, each with its own distinct beat, its own distinct sounds," was absent, as the tumor included the ordinary cardiac area and the real location of the heart was not ascertainable The absence of a thrill and of a murmur from the tumor is more corroborative than essential to the diagnosis, according to most authors, the number and solidity of clots in the tumor causing the variations in the signs to be derived from auscultation

A pulsating empyema is said, by all authorities to occasionally simulate aneurysm, especially when a pulsating tumor is situated in the region of the heart In the case reported, physical signs of fluid in the left chest were present, viz, flatness, with absence of respiratory sounds and lack of fremitus The tumor in this case was, however, enormously large for an empyema pointing externally Moreover, the tumor was firmer and the pulsation more expansile than would be expected in empyema, neither was the pulsation disseminated over the chest, unmistakable pressure signs were also present The needle showed the fluid in the chest to be non-purulent

The following case of pulsating empyema is reported in Stokes' work on the "Heart and Aorta"

The heart was displaced far to the right "Each stroke of the misplaced heart produced the most extraordinary diastolic pulsation of the whole left side The bed was shaken at each beat of the heart, and the patient's sleep interrupted by the vast and violent throbbing of the side, yet the force of the heart did not seem much augmented There was no appearance of any external pointing of the contents of the sac"

Solid tumors of the chest —Sarcoma, lymphomata and lymphadenomata are infrequent and tend to grow inward rather than outward Cancerous growths are more frequent If such a growth projects externally and pulsates, the symptoms and signs may simulate an aneurysm with rather firm clots The expansile force is usually, however, much less distinct The adjacent glands of the axilla and neck are often enlarged The veins on the side of the thorax affected are more apt to be distended and especially, according to Hayden, varicose The amount and character of pain is unreliable as a differential symptom It should be noted in passing, however, that the degree of pain in this case was far less than would be expected in either an aneurysm or a solid tumor as large as the one under consideration It is possible that he may have previously had more pain, but failed to recall the fact owing to the weak condition of his mind It is more likely that pain was not prominent on account of the pressure of the tumor being outward rather than inward The general health is usually poorer in cancer In this case the general health was poor, but the other conditions could account for it Osler and other excellent authorities speak highly of the diagnostic value, in aneurysm, of tracheal tugging, first mentioned by Oliver On the other hand, Wood and Fitz state that Grimsdale considers the sign of little positive value, "since he found it in 16 per cent of a number of persons free from aneurysm and examined with reference to its presence"

Mediastinal abscess —The size and location of the tumor, the character of pulsation, the degree of pressure symptoms and the character of the temperature would all tend against this as a probable diagnosis Nevertheless, although there was a general expectation to find an aortic aneurysm at the postmortem, that expectation fell considerably short of being a conviction in the minds of those who had examined this patient the most carefully The fluid in the pleural cavity, being clear, thin and non-fibrous, was probably due to pressure Osler speaks of aneurysm from the lower or posterior wall of the arch compressing a bronchus, thereby producing bronchorrhea, gradual bronchiectasy and suppuration in the lung—a process which by no means infrequently causes death in aneurysm, and a condition termed at the Montreal General Hospital "aneurysmal phthisis"

Pepper speaks of an irregular type of fever in such cases, as occurred in the case here reported, and that chills and sweats may occur, more strikingly showing a septic process

Lebert, who analyzed a large number of cases, found that the average duration of life after the first distinct symptoms of thoracic aneurysm was from fifteen to eighteen months A number of cases, however, are on record where life was prolonged for several years, and in a few for even ten years after an external tumor had appeared In Hayden's analysis of sixty-eight cases, death occurred from rupture of the aneurysm in twenty six instances In only one of these twenty-six was the rupture external Nine of the sixty-eight cases died from asphyxia In the case reported here death would probably have occurred in a very short time from external rupture

In reviewing this subject one is struck with the fact that hemorrhage from aortic aneurysm is far from being always fatal Slow oozing or even quite severe and repeated hemorrhages, if there are intervals in which to recover from the immediate shock, may extend over a considerable time Osler reports a patient who had "several brisk hemorrhages and who died four years after, having in the meanwhile enjoyed average health" Where there is an external tumor signs are apparent before rupture occurs Stokes relates the following case, in which there was an external tumor in the lower sternal region which had caused absorption of the bone There had been discoloration of the skin, followed by signs of sloughing, "so as to display what seemed to be the outer surface of the coagulum of the aneurysm At each systole of the heart this coagulum moved outward, so as to close up the orifice in the skin and then receded during the diastole After some days the coagulum gave way and a deluge of blood poured out Immediate death would have followed but for the presence of mind of the nurse, who, on the instant, snatched up a cotton apron and stuffed a portion of it into the opening of the chest" The patient lived many days in good health and spirits, his life, so Stokes says, "depending on the precarious support of a plug of cotton rag which at every stroke of the heart appeared on the point of being forced out of its situation The result was of course fatal"

Osler says that spontaneous cure is not very infrequent in small sacculated aneurysms of the ascending aorta In many of these cases, the disease has been unsuspected during life and the obliterated sac found accidentally at the postmortem Wood and Fitz state that aneurysms of the arch of the aorta "are always a source of danger and usually prove fatal, although they may exist for years Their progress may be checked for a long time by the formation of thrombi, but the process of repair is always incomplete, and it is doubtful if any true aneurysm of the arch large enough to produce symptoms has ever been healed"

Abut ten years ago a patient died at the County Hospital here whose physical examination gave dulness over a portion of the chest, which, together with other signs which have escaped my memory, could not be satisfactorily explained At the autopsy we were surprised to find the remains of thoracic aneurysm, the laminæ of organized fibrin showing beautifully

THE PATHOLOGIC ANALOGY OF BRIGHT'S DISEASE AND SYPHILIS

BY W H WHITEHEAD, M.D
ATLANTA, GA

First having my attention called to the efficacy of specific treatment in a case of albuminuria, in which I gave the mixed treatment of potassium [illegible] and mercury bichlorid for specific trouble, I was greatly surprised to see the albumin disappear, instead of its being increased by the supposed irritant properties of the iodid (as I had been taught it was "hard" on the kidneys), and was led to make a series of experiments in an effort to discover the modus operandi of this mixture, and whether it was the iodid or the mercury that produced the result, also, was the remedy only applicable to specific kidney lesion, or was it a remedy for the condition which we know as Bright's disease, but which I prefer to call arterio sclerosis renal, as this term conveys some idea of the pathology of the condition

Some years ago I was resident physician to a famous lithia springs, the waters of which are highly extolled for "all kidney and bladder affections" This modest claim brought many sufferers to "Mecca" Some were benefited remarkably, but I saw no authentic cure of Bright's, though many were greatly benefited in health, feelings, etc and the albumin diminished notably This was due to the large dilution of the urine, the increase in volume, and consequent removal of a larger per cent of deleterious matter

While at the springs I also had many syphilitics under my care, and to one of these cases is due the present series of experiments I have made, and am making, in regard to the treatment of albuminuria with antisyphilitic remedies, mercury and the iodids The case that first claimed my attention was one of chronic syphilis, fifteen years after the initial lesion, and was then suffering from intense pains in both tibiæ, and orbital pains These pains came on at sundown, lasted all night and went away early in the morning leaving the patient exhausted from suffering and terrific night sweats It was a sad prospect, and to add to the dilemma, his urine was "loaded' with albumin I made no quantitative test, but upon boiling in a test tube, the urine became gelatinous The patient had been to Hot Springs, Ark, twice, with some relief each time, but soon relapsed The physicians there told him his trouble was not specific but malarial, and gave him arsenic, iron, quinin, *et al* He also took some baths and "rubbed some mercury" while at Hot Springs I do not remember now whether he was instructed to do this by his physician, or whether he did it to keep from appearing odd

At this time I was passing through the stage of evolution professionally, best called the electric craze I tortured this poor man for weeks by applying galvanic electricity to his exquisitely sore shins and frontal region Usual result Having my suspicions aroused by the nocturnal recurrence of the pains and previous history of syphilis, I told him I thought a trial of antisyphilitic remedies was warranted He consented readily, but there was that albumin, and the old idea of potassium iodid being hard on the kidneys

But something had to be done, as the resident physician is supposed to be equal to all emergencies, at least to the keeping of all comers as long as possible, so I gave the regulation mixture

Potassium iodid	℥ iss	80	
Bichlorid mercury	gr vi		72
Aqua qs ad to make	℥ iv	130	

M Sig —20 drops t i d in half a glass of sweet milk after meals Increase as directed

In this mixture he received about fifteen grains of potassium iodid and about one-sixteenth grain of bichlorid in each twenty drops This dose was increased one drop daily until he was taking thirty five drops three times a day, or about twenty-five grains of potassium and about one-ninth of a grain of bichlorid At this time ptyalization caused the remedy to be suspended for a while, and on resuming it was given in fifteen drop doses t i d, increased as before I will not dwell on the syphilitic feature of this case, as all such is ancient history It is sufficient to say that all pains, night sweats, etc, disappeared within one month, and that under a continued and varied course of treatment extending over two years, he was thoroughly restored to health, gaining over sixty pounds in this time

The only connection between all this, which happened years ago, and the present paper, is the above mentioned albumin Being solicitous on account of the fallacious idea believed to be medical knowledge, and having heard some one say, or read that some one did say, "iodid of potash was hard on the kidneys," I often spoke to others of the danger of giving large doses of iodid of potash, on account of the kidneys, and they, like myself, said "yes, yes, it is very dangerous" All had heard or read the same fallacy, for it is a fallacy, pure and simple So, when I examined the urine of my patient, who had albumin, and whom I had put on the dangerous iodid, and found no increase of albumin, but on the contrary not near so much as I had found on the previous examination, I said, syphilitic albuminuria, gumma of the kidneys, fortunate thing, all syphilitic, will get well, and so he did, but I came near losing what I believe to be a grand truth It passed me like a ship in the night I thought the albuminuria was due to syphilitic disease of the kidneys, and hence the result Today, I believe this the true and rational treatment for the condition we know as Bright's arterio sclerosis renal If the therapeutic test is worth anything, one of two things is true Bright's disease is of syphilitic origin and demands syphilitic treatment, or the pathologic condition of arterio sclerosis and cell infiltration that is present in both diseases demands the same remedies witness the absorption of immense gumma, or the magic healing of old syphilitic rupia, to say nothing of the remote neuroses and circulatory lesions, even mental equilibrium being restored by specific treatment, when such conditions are truly due to syphilitic processes

There is nothing strange or occult in the action of these drugs, it is simply the eliminating qualities of them I do not know just how the thickened walls of the delicate arteriole and capillaries are absorbed, their elasticity and contractility restored, their circulatory functions renewed, and even the necrosed material absorbed or washed away by the renewed life current, but I know that this very thing is done when a syphilitic sore is healed, or a gumma is absorbed by the intelligent use of mercury and the iodids

If then, we admit the striking similarity in the pathology of syphilis, and the disease process known as Bright's disease, why should we marvel if the same remedies are applicable to the same pathologic condition, even though etiologically different, which is not proven

I have no table to submit, no ax to grind I have applied this theory now in many cases of albuminuria, only one, the first, having any personal history of syphilis In all of them the albumin is diminished or disappears altogether in from thirty to sixty days, recurring in some, to again disappear under the same treatment In some it has not recurred at all after a lapse of years I have used the proto iodid in one case along with potassium iodid Results the same I have tried iodid alone and mercury alone Either will diminish albumin, but the best results are obtained by the mixed treatment

I now submit the proposition to the profession and await the result

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GOLF FROM A NEUROLOGICAL VIEWPOINT

Read at a meeting of the American Neurological Association in New York, May 1898

BY IRVING C ROSSE, M D

WASHINGTON D C

Long before the Columbian rediscovery of America our hardy Caledonian ancestry amused themselves by playing the royal and ancient game which has been defined as the putting of little balls into little holes with instruments very ill adapted to the purpose In those days certain ascetic and lugubrious persons like the sham-pious reformers of the present, who condemn as sinful anything that makes people feel happy, cried down golf, football and other so-called unprofitable sports, which were prohibited by decree, the legislative blight being a canon of the old Scotch parliament against golf

Being difficult to extinguish strong instincts, people gave no heed to such prohibitions against the natural and wholesome promptings of the play impulse and manly pastimes of a vigorous race, and today we find a game with a long pedigree taken up and assimilated from Scotland, and so fascinating as to have spread around the English-speaking world

Instead of dividing mankind, as some mathematicians do, into two classes, namely, those who have read analytical geometry and those who have not, it is now more appropriate to say those who play golf and those who do not, or as an enthusiastic devotee to golf might put it, those who are long drivers and those who are not

What was yesterday the fad of a few has today become the practice of many sorts and conditions of men, who find in the exhilarating game of golf (which experts prefer to call a *study*) a means of hygiene and sport of inestimable value

A short time since, in a paper prepared for this Association "On the Conservative Value of the Play Impulse," I endeavored to point out the individual and phylogenic good brought about by the exercise of the manly sports and amusements that brought together men and women of the leisure class at such places as the tennis court, the hunt, the meet, the golf links Since then the game of St Andrews in Fifeshire has encircled the earth, like the world-invading Campbells, and the descendants of a race to which piper Findlater belongs take their amusement seriously at sea side links or on grassy moorlands at a game than which none is a severer test of nerve and none requires more stupid, dogged patience and harder work

Any golf player familiar with the niblick shot out of sand in front of a bunker cliff will, I am sure, recognize the cool judgment and prompt action required by a successful player who makes a good drive and avoids or extricates himself from awkward hazards, as well as the many advantages entailed thereby in the way of invigorating and healthy employment of the highest bodily activities

Doubtless from the sportsman's point of view and that of the hygienist, the value of golf is quite apparent, but its therapeutic value, not so well established, is practically an untrodden field and in need of an exponent

In the capacity of physician and neurologist it is impossible to familiarize one's self with the facts of the game in this relation without seeing its many advantages and acknowledging merits beyond all praise

To the neurologist, who trusts to psychic, mechanical and hygienic influences rather than to drugs for treatment, the theme is replete with magnificent possibilities of prophylaxis and even of therapeutics We have a royal road to physical exhilaration in a game that can be played all the year round, independent of atmospheric vicissitudes, during all the seven ages of man, by delicate young girls as well as by strong athletes, and even by decrepit old men, whose declining powers do not admit of severe exertion It combines exercise, pleasure and fresh air without the risk of injury to heart, lungs or nervous system of some other exercises in which there is high blood pressure and arterial tension To be more specific, there is absolutely no danger attached to the game, and consequently no accidents ensue Unlike the bicycle, it is doubtful whether such a thing as an accident insurance was ever paid for injury incurred at golf Nor is the game contraindicated in heart lesions, arterial calcification, albuminuria, old age, childhood and certain hysterical conditions which would be aggravated by such exercise as bicycling, swimming, horseback riding, or by mountain climbing

To be more explicit, I may say that in all affections marked by slowing of oxidation, or in those consequent upon intoxication by the products of organic disassimilation, the game of golf is to be recommended as the best adjuvant method of bringing about a cure

The obesity and degeneration of middle age, when the biceps has diminished and one's energy is wanting, may be helped by devotion to golf The further tendency of the exercise is to eliminate the so called diatheses and thus do away with gout, lithemia, headache and dyspepsia, while its hygienic and therapeutic consequences are admissible in cardiac and pulmonary affections Although moderation is advisable in such circumstances, there can be no doubt of the benefit derived in some cases of cough, nervous asthma, and in affections of the bladder and prostate

But it is pre eminently in functional nervous disease that our great Anglo-Saxon game is to be recommended, both as prophylactic and curative No exercise or recreation is better for the mentally overworked, the hysterical, the melancholic, none helps to preserve the concerted action of eye, brain, and muscle known as the psychological moment, none, perhaps, with the exception of swimming, gives one so good an appetite, there is not a more sovereign remedy for dyspepsia, and as to insomnia, such a thing scarcely exists among the devotees of golf

Improvement in appetite and digestion has come under the notice of nearly every one connected with a golf club Only two years ago the breezy air of the Newport golf-green caused such an improvement in this respect that the members of the club discharged a French for a negro cook, whose [illegible]hes were considered more who[illegible] better [illegible]o a golfer's appetite

In addition to the [illegible] and

mind imparted by golf, the social amenities arising therefrom are of unquestionable therapeutic value, since the genial influences of the game, by expanding the ideas, tend to promote the good fellowship that comes from diversion and sensuous amusement, and by oiling the wheels of life, so to speak, makes them go on with rattling glee In these days of excessive drive, competition and over-pressure, when undue waste of vital energy shows itself to the clinician in the way of various neuropathic conditions and decayed nerve elements, the problem of averting or mitigating such mischief comes to us with much seriousness An obvious help in the solution is the encouragement of all innocent sports and recreations as a compensating factor in the phenomena of life The condition applicable to the greater number is partly met by the present "boom" in a game that accurately reflects and expresses a great race and falls in with the spirit of our age of haste and subjectivity

If there be one innocent recreation adapted more than another to all sorts and conditions, but more especially to the gloaming of life, when the mind needs an alterative, that healthful tendency is to be found in the national game of Scotland.

MEDICO-INSURANCE

Presented to Section on Practice of Medicine at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Colo June 7-10 1898

BY S T McDERMITH, M.D

DENVER, COLO

Briefly as possible I will venture a few suggestions along lines that point to a domain unexplored by this Association, or at least unoccupied by this body It is a virgin field, inviting the cultivating touch of the medical husbandman, an undeveloped province awaiting conquest

For fifty years the profession of this country has had vague cognizance of the existence of such an Eldorado, but has never braved the wilderness, the tropics or the desert, to reach it

The populace of this country had a vague knowledge of the Philippine Islands, that much of our hemp and palm leaf fans and manila wrappers for cigars were imported from there, but not until the echoes of Dewey's guns and the dull thud of a Spanish fleet striking the bottom of Manila bay and startling from its lethargy a civilized world, was any interest manifested in those tropical isles so rich in natural resources

So I say for years the profession has, in a desultory way, and incidentally, had to do with Medico-Insurance, but no influence has been sufficiently exerted to arouse it to an appreciation of this rich isle in the Medical Pacific, rich in subjects for study and rich in results

The writer, mindful of the couplet that

"Fools rush in
Where angels fear to tread,"

has no expectation that this shot will electrify a profession, an association, or section, and start it charging to encompass the goal, but he hopes that it may modestly contribute to forces whose captains and commanders yet to be chosen may ring the changes and fire the ordnance, the echoes of which may be heard to the uttermost confines of this Association's domain

When you stop to consider that the personality and skill of the physician are important factors in commercial transactions involving billions of dollars, as the combined life insurance bodies now do providing a source of income to the profession, of millions of dollars annually, is it not amazing that this Association, the most important and authoritative organization of medical men on this continent, has given the subject no recognition? Is it not astonishing that the insurance interests have not ere this demanded recognition?

It has ever been taken for granted that a physician, any physician of recognized good standing, was fully competent to prosecute an examination for life insurance

Prior to the advent of specialties in medicine, it was likewise assumed that the general practitioner, the only kind of practitioner then known, was quite competent to diagnose and treat diseases of the female organs, genito-urinary or skin affections, ophthalmic and aural ailments, equally with fevers and all other systemic derangements

If any logic will justify specialties in medical practice, it will equally sustain the demand for special study as a requisite to competent work in the field of medico-insurance

However well equipped a medical man may be for encountering the host of destroyers in the open field of pathology, without self or other training for medico-insurance, he is incapable for estimating the factors which go to make up the rating in a given case And the lack of familiarity in this operates to render his examinations and report thereon indifferent, or of doubtful value

The whole scheme of life insurance is based, not on certainties, but on probabilities, yet it is the business of the actuary with the essential aid of the examining staff to eliminate all of chance that it is possible to eliminate, by adding pillars of strength to the structure's foundation, and this consists in the judicious selection of life risks, and the responsibility for such selection rests almost wholly with the medical examiner, and how, without special study fitting him for the work, can an examiner meet that responsibility and render a service consonant with the demands of the service?

To attempt to enumerate, much less discuss the subjects for study which naturally group themselves under the general heading of medico-insurance, would extend this paper to unreasonable limits A few examples are alone sufficient to suggest the broad field that is open to those who would till it But I insist that this Association should be the gateway to that field

First "Appendicitis as a factor in insurance"
Second "Consumption from an insurance standpoint"
Third "Cancer and its relation to insurance"
Fourth "Syphilis, its bearing on life risks"

These, with hosts of other sub-titles entering into personal or family history, together with the weight of the applicant in relation to height, the occupation, habits, environments, etc, are subjects for chapters and volumes, which should vitally concern any one essaying the important rôle of medical examiner

The British Medical Association has inaugurated a Section devoted to this special study, the first session having been held last week at the meeting of the

Association in Edinburgh The Section is there given equal recognition with Medicine, Surgery, Ophthalmology, or any other recognized branch of the profession

Insurance medicine has therefore, in a sense, been legalized as a specialty by a scientific body which easily stands at the head in the civilized world It would be appropriate for this Association to early follow the example

That there is a demand for opportunities to cultivate and develop this important field, and that there is an awakening along these lines, it only need be mentioned that special, independent associations have been formed, as "The Association of Medical Directors," an organization of Medical Directors of old line companies, "The Chicago Association of Medical Examiners," "The Pacific Coast Examiner's Association," and other independent societies, besides the Sections in the Fraternal Congress and the Mutual Life Underwriters' Association, devoted to the sub ject I am informed, too, that special courses on insurance have been provided in a few centers of medical tutelage, in the University of Yale and the Vanderbilt University, and perhaps others

So, since the growing need of a wider dissemination of medico-insurance knowledge is so apparent, I would venture to suggest that its recognition and fostering through the medium of either a separate Section or as a sub division of the Section on Practice of Medicine would be a move in harmony with progress, in keeping with the needs of the profession, and would comport with the objects and dignity of this, the largest and most august Medical Society in the land

SURGERY OF THE LUNG

The Oration in Surgery Delivered at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Col June 7 10, 1898

BY J B MURPHY, M D

CHICAGO ILL.

(Continued from page 216)

INFECTIVE LESIONS OF THE LUNG WHICH CONCERN THE SURGEON

The surgical infective lesions of the lung are abscess, bronchiectasis, gangrene, foreign bodies, cysts (echinococcus and dermoids), tuberculosis and actinomycosis Abscess of the lung is not as common a pulmonary affection as might be inferred from the number of cases reported as such in the literature A careful scrutiny shows that a considerable percentage of the cases reported as abscesses are empyema communicating with the bronchus, subdiaphragmatic abscess rupturing into a bronchus, or circumscribed interlobar pleurisies

Abscess—Etiology —The most common cause of abscess of the lung is 1, acute circumscribed inflammation, as pneumonia, followed by necrosis and softening of the lung, 46 per cent , 2, peribronchitis, 3, septic embolism of the pulmonary artery, or a single branch of the bronchial (pyemic embolism), 3 per cent ,[43] 4, rapid tuberculary caseation and necrosis, with secondary infection, 5, perforation of the lung by infection from malignant diseases of the esophagus and mediastinum, 6, subphrenic perforations into the lung with retention, 7, foreign bodies in the bronchi 11 per cent (Tuffier), 8, infections following injuries, 9, suppurative inflammation around calcareous deposits, the latter either a sequence or a cause of the suppuration From the above it will be seen that the pathology of abscess of the lung is as varied as its etiologic factors Its clinical course, its treatment and its termination will vary with its etiology, what then concerns us most as surgeons is its diagnosis and treatment

Symptoms —The symptoms will vary also with the etiology, take, for example, an abscess following pneumonia The case runs the ordinary course of a pneumonia, there is nothing special to indicate the probable necrosis and suppuration of the lung during the course of the disease till the time for resolution has presented itself when the time has arrived for the cessation of fever, cyanosis, delirium and toxic symptoms the sudden change so characteristic of pneumonia does not take place The fever continues with more marked morning remission and evening elevation The hectic flush and sweats are more pronounced, the tongue remains dry, coated and cracked, in other words, the symptoms of pus infection have supplanted the symptoms of pneumonia In some cases there is a sudden expectoration of a large quantity of pus in which may be found lung tissue and various micro organisms, as pneumo-, strepto- and staphylococci, bacillus communis coli, etc The expectoration is most frequently fetid, though not necessarily so This fact aids materially in making a diagnosis If the abscess be caused by a septic embolus, by a foreign body, perforation of the esophagus, etc , the history will vary from the above Where it is produced by the suppuration of a cyst, as a hydatid the characteristics (hooklets) will be present, again, when a dermoid in the chest cavity suppurates and opens through a bronchus there will be found sebaceous material, hair or even teeth in the expectoration (Ogle Godlee)

Physical signs and diagnosis —The physical signs will vary with the size, location, presence or absence of bronchial communications and etiology, the presence of dulness, the absence of respiratory sound, absence of cavernous breathing, the diminished vocal fremitus, the absence of intercostal movement in respiration, the stationary area of dulness, lead to the belief that there is an accumulation of fluid, a differential diagnosis must then be made between cysts, pleuritic effusion, gangrene, abscess, and consolidation Inspection shows a marked loss of respiratory movement and occasionally signs of edema where the abscess is situated close to the chest wall If it be deep in the lung the respiratory movements may not be interfered with Percussion where the abscess does not communicate with a bronchus reveals a circumscribed dulness If the abscess communicates with a bronchus we may get a cracked-pot sound, or the dulness may be the same as if non-communicative if the cavity is kept constantly full of pus Great care should be taken in making comparison between the deep and superficial percussion notes to determine if lung tissue intervenes between the abscess and the chest wall, the area of deep and superficial dulness should be carefully outlined on the chest surface

In auscultation the sounds will vary, depending upon the presence or absence of bronchial communication There may be a superficial respiratory murmur with a deep abscess The vocal fremitus is diminished If the abscess be large, distant bronchial breathing can often [illegible] When brc [illegible] communications exist we have the amphoric breathing, often the distinct metallic tinkle, the whisper sounds and the gurgling In pulmonary abscess and bronchiectatic cavities the stethoscopic examination is liable to be misleading as to their location, they often appear to be situated farther from the hilum than they are in reality In my experience this was not true, as the percussion and auscultation revealed the location when the cavity was situated in the anterior portion of the lung

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[43] Porter Jour Amer Med Association March 9, 1891.

Exploratory puncture has been considered the crucial test, although authors differ widely as to its value and significance as a negative manifestation E Bull considered it of only moderate value, still he insists that it should always be used where drainage is indicated He attributes its deficiencies, 1, to failure in proper location of abscess by other physical signs and therefore not reached by needle, 2, to a plugging of the needle before the cavity is reached, and 3, to abscess contents being too viscid to pass through the needle Tuffier says exploratory puncture is permissible but often deceptive, and when negative the puncture is to be made many times In his cases he made from two to twelve punctures in each case and found with this large number of efforts he failed to locate the cavity in 17 per cent of the cases of gangrene, 17 per cent of the abscesses and 33 per cent of the bronchiectases He further states that puncture is harmless when done at the time of operation, but at other times may be dangerous, it is deceptive, as it does not show the multiplicity of the lesions He found in twenty-eight cases that the primary exploratory puncture produced positive results in sixteen, multiple punctures added seven positive results to the number, and in five the result was negative Foul gas in the syringe is just as positive, from a diagnostic standpoint, as pus Bushnell favors repeated punctures for localization

The dangers of exploratory puncture are 1 Hemorrhage In recalling our anatomy we are reminded that a blood vessel accompanies each of the bronchi, these are likely to be punctured in exploration, give blood in the hypodermic, and may be followed by fatal hemorrhage, a case is reported by Fraentzel In two of my cases of bronchiectasis there was considerable blood expectorated after puncture, but not sufficient to cause alarm 2 Infection of pleura The literature supplies a number of cases in which the pleura became infected following exploratory puncture, either from the escape of pus through the puncture canal, or from an advancement of the process along the canal into the pleura subsequently, producing an infective pleuritis 3 Gangrene A gangrene along the line of puncture involving the external chest wall has followed exploratory puncture, therefore exploratory puncture is not as harmless even in pleuritic adhesions as might be believed 4 Pneumothorax This has proved to be a serious complication following exploratory puncture only when accompanied by infection I am convinced that exploratory puncture in the surgery of the chest, for diagnostic purposes, will not become a common procedure except for localization at time of operation

Location of the abscess —The abscess may be situated in any portion of the lung Tuffier found it in the lower lobe in 80 per cent of the cases and most frequently in the posterior portion of that lobe With the aid of the radiograph we are able to determine if the abscess be close to the anterior or posterior wall of the chest, as can be seen from radiographs of Miss K

Treatment —After the diagnosis has been determined, should the treatment be palliative (therapeutic, pneumothorax, puncture with trocar or aspiration) or surgical (resection of chest wall with compression of lung over abscess, incision with drainage)? That will depend somewhat on the etiology and location of the abscess, but more particularly upon its size Should there be an absence of adhesion and the lung collapse when the pleura is opened, and if the abscess communicates with a bronchus, it would seem from a theoretical standpoint that it should drain and close Thoracotomy in this manner is so easily performed that it appears to me applicable in the class of cases in which pneumotomy is most dangerous, *i e*, where there is an absence of adhesions It allows of, *a*, drainage through the bronchus, *b*, contraction of the cicatricial abscess wall, *c*, peripneumonic compression from the air in the pleural cavity All of these should favor the repair of the abscess We know from the results following operations for pyo- and hydrothorax that the lung after a long period of compression, re-expands and functionates, this point is most forcibly illustrated by the cases of Delagénière If pleuritic adhesions exist there can not be a general collapse of the lung, it would only be partial

Puncture and aspiration as treatment for abscess of the lung has rapidly fallen into disuse William Koch favored this procedure, as he feared pneumotomy The treatment of suppurating cavities by means of aspiration in most positions in the body has been very unsatisfactory, and abscess of the lung is no exception to the general rule The trocar and permanent canula have been advised and used in cases with adhesions, and particularly advocated when adhesions did not exist, the canula was intended to conduct the septic material across the pleural cavity to the opening in the chest wall Dr E Fletcher Ingals[44] reports three cases treated by aspiration alone, all recovered He states the diagnosis of abscess was not confirmed by microscopic examination and might have been circumscribed or interlobar pleurisy Dr McArthur, in discussing Dr Ingals' paper, advocated operation with packing of pleura with gauze to protect the pleura when adhesions were absent T Anderson[45] successfully operated a case by first introducing a trocar, waiting two days and then dilating with artery forceps, there was no hemorrhage Cummins[46] did a similar operation with recovery

It would seem far preferable in these cases to make a large free opening in the chest by resection of the sixth, seventh and eighth ribs, pack gauze around the infected area, open the lung cavity and freely drain the costo-diaphragmatic cul-de sac, as advised by Delagénière for empyema

The canula and trocar have been used with indifferent success in the treatment of pulmonary abscesses, while its inefficiency has not been so pronounced in abscess as in gangrene, the records show that it is far from satisfactory and not free from danger, in many cases secondary thoracotomy and pneumotomy had to be performed A case forcibly illustrating this point is reported by J Eustace Webb,[47] where an apparently perfect drainage through the canula ceased after six weeks, a few weeks later a pleurotomy had to be performed on the anterior side, patient recovered H Havelock Davies reports a successful case with the canula and trocar treatment[48]

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[44] Jour Am Med Association Vol xxviii 1896 p 397

[45] Am Prac and News Louisville, 1890 N S V 10-12

[46] British Medical Jour, 1889 Vol i p 299,

Bull, in 1884, urged that all abscesses should have artificial fistulæ established, that all cavities should be drained to prevent secondary results He realized the difficulty of estimating the size of the cavity and differentiating between one large cavity and multiple closely allied small ones He considered that tuberculosis was a positive contraindication to the establishment of drainage

By an external physical examination we are unable in the great majority of cases to determine the presence or absence of adhesions Occasionally a friction sound will be heard, which will indicate that there are no adhesions at that point I have demonstrated that the absence of adhesions can be positively diagnosed By introducing an exploring syringe trocar through the skin into the intercostal muscles, the stilette is then withdrawn and the trocar is connected with a filter bottle to which a bag of nitrogen gas or sterile air is attached, a slight pressure is placed on the reservoir and the trocar is pushed forward until the parietal pleura is penetrated, if adhesions do not exist the gas will suddenly commence to flow and the lung will collapse On the other hand, if the lung be adherent, the trocar will traverse the parietal and visceral pleuræ and penetrate the lung and the gas will not flow To illustrate

Case 1 —Mr K , clerk, age 24, Cook County Infirmary, admitted to hospital April 30 Suffering with tuberculosis of the right apex, physical signs extending down to the margin of the third rib in front, tubercle bacilli present. He was placed on the table and a puncture made with the trocar, as described above, when the parietal pleura was punctured the gas was seen to suddenly pass through the filter solution and soon the physical signs of pneumothorax presented themselves, 120 cubic inches were injected, proving absence of adhesions The history of this case will be given in full in connection with the treatment of tuberculosis by defunctionalization

Case 2 —E L male, age 34, Cook County Infirmary Phthisis in second stage, with cavity in right upper lobe, the method was the same as was used in the preceding case, after the insertion of the trocar there was no escape of gas until the lung was deeply penetrated, then it passed freely and was detected in the upper air passages, there was no collapse of the lung, no inconvenience was produced by the injection, showing that adhesions existed

Bull considered it was not necessary to a good result in opening abscesses that adhesions should be present, this is also shown by the case of Kroenlein One of the indications given by him for success, was that the cavity must be near the surface, and if adhesions were not present a trocar should be used to conduct the pus out of the pleural cavity He advised the use of caustics to produce adhesions This, however, had been advised previously by Krimer in 1830 Péan, in 1861, suggested suture of the visceral and parietal pleuræ for the production of adhesions before opening the abscess cavity Barry and Graux also advised this method Godlee suggested puncture for the production of adhesions Mosley favored salicylic acid Quincke urged zinc chlorid for the same purpose, Krause, a tampon Quincke made fifteen experiments for the establishment of adhesions by suture, his results showed the method a failure[49] Tuffier found adhesions present in 87 per cent of the septic cases

Tuffier,[50] in his most excellent paper, considers that the dangers are great where adhesions do not exist and that opinion was based on his experience in eight cases in which complete pneumothorax occurred during the operation, in two death was immediate, one died a few hours after the operation, two recovered (suppurating foci not opened), one recovered (focus opened four months later), and one with immediate opening of focus The first three of these results appear to be attributable rather to the character of the opening than to the presence of a pneumothorax From a perusal of the most recent cases reported and from my experiments I feel convinced that adhesions are not necessary to success, and furthermore that their absence has advantages, as then the entire hand may be inserted into the chest for the palpation of the lung and location of abscesses, further, I am convinced that abscesses without adhesions, and with bronchial communications, should not be treated by incision and drainage through the chest wall, but by producing collapse of the lung by injecting nitrogen gas or a liquid into the pleural cavity, thus compressing the lung and allowing the connective tissue in the wall of the abscess to contract and obliterate the cavity, with the aid of the bronchial drain

Operation —In abscesses of the lung the earlier the operation the better the prognosis (Sonnenberg) The incision in the chest wall should be the U or H shape which admits of an extensive resection and thorough exploration of the field in which the abscess is located The ribs should be resected subperiosteally, if possible without opening the pleura After the chest has been opened and adhesions found present, the location of the abscess must be determined, this may be accomplished with the exploring needle, with the scalpel, or, better still, by careful digital palpation The lung may be pushed away from its parietal adhesions and a digital palpation made in every direction until the position of the abscess is determined, then the exploring needle may be used to confirm the diagnosis The scalpel should be used to incise the lung and abscess wall E W. Andrews favors the scalpel, and successfully incised an abscess four inches below the surface of the lung and removed thirty-five grammes of calcareous material from the cavity The hemorrhage is unpleasant but rarely dangerous, three serious cases having been reported, one by Quincke, and two fatalities, one each by Fabricant and Andrews In the latter case no autopsy was permitted The patient had several severe hemorrhages preceding the operation, it is presumable that the fatal hemorrhage was from the same source The hemorrhage following the incision can be controlled by compression, or better, by accurate catgut suture I found the latter more satisfactory in my experimental work The scalpel is preferable to the cautery, it produces a clean incision, it allows of inspection of the tissues divided, it permits a view of the cavity when opened and a suture of the lung tissue for hemostasis if necessary, the cautery may be used on the incised surface to still the bleeding There is, however, with incision some danger from air embolus of the pulmonary vein, as the blood here may have a minus or a very feeble plus pressure, and in deep inspiration the air is aspirated into the vein Quinke reported a fatal case of this character Reclus favors the Paquelin cautery for opening the abscess If

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[47] Lancet, London June, 1895, p 640

[48] Lancet, London, Sept 1 1888

[49] Med Week., Paris, 1895, p 505

[50] Inter Med. Cong , Moscow

the lung recedes after the division of the pleura the opening should be rapidly enlarged and the hand or cyst forceps inserted to draw the lung out It can be retained here by sutures to the parietal wall and packed around with iodoform gauze The lung in this position admits of accurate palpation and if the tampons are properly placed there should be little risk in the immediate opening of the abscess A large drain of soft pure rubber should be inserted and secured by suture to the lung and chest wall, or, better still, rolled gutta percha paper or gauze drain may be used The rubber drain has been charged with being the immediate cause of hemorrhage from pressure necrosis of the vessel wall (Walsham and Sutherland)

The irrigation of pulmonary cavities is rapidly going into disuse, it produces unpleasant symptoms and in one case caused a fatal result—laryngo bronchitis—boric acid and thymol having been used H W Austin[51] reports a case in which irrigation with bichlorid was used without producing unpleasant symptoms, although the patient almost drowned from rupture of the abscess into the bronchus during operation Case recovered

Experiment 1 —Nov 1, 1897, black dog, weight about 30 lbs , right side of chest was shaved and rendered aseptic by scrubbing with soap, ether, alcohol and bichlorid 1 1000, ether anesthesia, usual antiseptic precautions with instruments, ligatures, towels, lap sheets, hands, etc , an incision, 3 inches long, over and parallel to the second rib was made, resected three inches of the latter, the pleura was incised for two inches, immediate collapse of the lung was observed, the vibrations of the mediastinal septum were watched and it was noted that with each inspiration it vibrated farther to the left and with each expiration farther to the right, it became thinner and thinner until it was a mere film and looked as if it would rupture, the attenuation took place anterior to the mediastinal contents, the dog became cyanotic and finally ceased breathing, the chest walls were then compressed and the opening in the right side closed by the palm of the hand, when the chest expanded the dog began to breathe regularly and rapidly, his cyanosis quickly disappeared, when the hand was removed respiration would rapidly cease, when replaced it would go on as before, it appeared to make no difference whether the aperture were closed at the end of inspiration or expiration The upper lobe was drawn out through the opening with the forceps, the apex was split with the scissors down 1½ inches, the incision was closed by accurate continuous catgut suture, the lung was dropped back into the chest and the opening closed with a deep suture of muscle and fascia with catgut and a subcutaneous buried suture of the same material, the dog was not sick after the operation, as he absconded on the twelfth day I was unable to obtain the specimen, with which I wished to show the histology of repair of incision The literature furnishes us many reports of repaired punctured and bullet wounds of the lung The restoration is so perfect that it is often difficult or even impossible to locate the track of the missile from the pathologic evidence I therefore did not repeat this simple experiment

Prognosis —Reclus reported 23 pneumotomies for abscess, with 20 recoveries and 3 deaths J Schwalbe* says that, of 50 per cent of the cases operated for acute and chronic gangrenous abscess recovered and 40 per cent died In chronic bronchiectatic and simple abscess only 16 per cent recovered, 41 per cent died Of 43 cases collected by Tuffier there were 10 failures, in 7 per cent of these the failure was due to inability to locate the abscess, from an inexact diagnosis or from the absence of adhesions Fabricant reports 17 abscesses following pneumonia all operated, with 14 recoveries, 7 following infection, with five recoveries, 3 suppurating hydatids, all recovered, 2 gunshot wounds, both recovered in all, 29 cases, with 24 recoveries J Blake White performed pneumotomy twice on the same patient at an interval of three months with success Ramsay† reports four cases of pneumotomy The ultimate results, when the abscess has been opened and drained, are favorable, particularly in the acute abscesses following pneumonia the subacute or chronic heal slowly with prolonged or permanent fistulæ The earlier the operation the more certain and rapid the healing, as the wall is thinner, the cavity usually small and the reparative process more rapid I have collected 71 cases of abscess of the lung, of these 49 completely recovered, 5 recovered with fistulæ, 16 died, 1 from the operation, 10 from undetermined causes, 3 from exhaustion, 1 from hemoptysis, 1 case was lost sight of

Lung Abscesses from 1878 to 1897, years in rotation

Case 1, 1878 Radsk, Centralblatt f Chir , 1878 No, 44 p 750 Male, aged 44 years Two large abscesses in region of right mamma Emphysema necessitatis with communication with right bronchus, located in region of right mammilla incision and escape of one liter of pus irrigation with carbolic acid, followed by rise of temperature In next few hours there was improvement Death in 29 hours Necropsy Large abscess cavity in lower lobe and fresh pleuritis on opposite side

Case 2, 1879 Austin Rep of Super Surg Gen Marine-Hosp Service Vol 17 1879 p 246 Male, aged 21 years Empyema and abscess of lung duration 3 months Had a cough Located in left side; abscess in upper lobe of left lung abscess probably communicated with pleural cavity Aspirated several times about 1 month before operation aspiration showed a clear fluid at time of operation puncture almost pus Incision 1¼ inches long in axillary line between 9th and 10th ribs rubber drainage tube inserted, 5 quarts of offensive pus escaped at once 3000 c c , 1-4000 HgCl solution irrigated Recovery, with persistent fistula

Case 3, 1879 Sedgwick, Lancet, March 29 1879 p 441 Abscess of lung Typhus Puncture twice at short intervals

Case 4 1882 Fime Norsk Mag for Hæger, 1882, No 22, in Runeborg obs 4 Female aged 4 years Abscess of lung Duration 7 weeks Acute lobar pneumonia upper left lobe Location, apex of left lobe in front Incision in 2d or 3d intercostal space pneumotomy, Pus had mixed with air drainage Slow recovery

Case 5, 1882. Lancet 1882, Vol 1, p 601, Payne Male, 23 years. Abscess that had been diagnosed as purulent pleurisy Acute inflammatory affection of lung (pleurisy) Located at base adhesions Puncture, axillary line, positive result Incision, pleurotomy (venous hemorrhage), drainage Temporary improvement patient died seven days after Necropsy No pleurisy abscess of lung report not very precise

Case 6 1882 Quiss Wiener Med Woch No 3, Vol 3, 1882 p 364 Male, middle aged. Abscess Pneumonia fluctuation on chest wall Incision 1 cm long in seventh interspace large quantity of pus removed two hours after operation great bleeding gradual improvement. Dismissed in seven weeks cured

Case 7 1884 Rohden Deut Med Woch 1884 Vol 14 Female, 20 years Empyema and abscess of lung duration two months Left-sided pneumonia, on lower left side Puncture at angle of sixth and eighth ribs emptying 1100 c c of fetid pus Thoracotomy on August 8 drainage and irrigation with salicylic acid sol fever diminishes and improvement sets in on August 30 drain is removed, temperature now rises and patient becomes worse the wound reopened, drain and finger introduced abscess of lung is thus opened and pus escapes, continuous irrigation improvement after several months the fistula is healed

Case 8 1884 Pridgen Teale Lancet 1884 Vol 2, p 6 Male 54 years, Pulmonary abscess cavity Pleuro-pneumonia one month before Location at base of right lung posteriorly pleural adhesions First puncture serous liquid second puncture pus two days after cavity punctured with trocar, fetid pus Incision at right of puncture pleural cavity contains no liquid puncture of adherent lung yields pus opening enlarged with finger escape of two pints of pus drainage, carbolized irrigation Recovery drain removed five months after Patient seen three years after some retraction of thorax and feeble respiratory excursion on right side later patient had two operations with death

Case 9, 1884, Waugh quoted by Tabucaat Male 53 years Abscess of lung acute pneumonia of left lung Resection in ninth intercostal space profuse hemorrhage, checked by tamponade Good and complete recovery

Case 10 1885 Broadlett Med Jour May 31 1884 Large cavity in lower left lobe which was opened followed by slight improvement. Cavity opened Death

Case 11 1885 Andrews Jour of Am Med Assn , 1885 Vol 5, p 261 265 Male 28 years Abscess of lung Located left side posteriorly Signs of cavity Puncture between fourth and fifth ribs, no result second puncture in anterior chest wall finds pus Incision on needle, no rib resection large amount of fetid pus escaped irrigated with carbolic solution Recovery rapid and complete

Case 12 1885 Korobein 1885, quoted by Fabricant Female, 11 years Abscess of lung and empyema Located in left lung Positive puncture Resection after eight days' drainage after seven months wound made larger Recovery

Case 13 1886 Bouilly 1886, quoted by Fabricant Male 46 years Cavity in upper right lung Ecchinococcus removed 10 years ago by expectoration Located in upper right lung pleural adhesions Resection of C 7 cm from third and fourth ribs pneumo-cautery used Recovery left on eighteenth day

Case 14 1887 Hassen Mamg Disooft Kiel, 1886 et Berlin Woch 1887, Obs du Quincke p 138 Female Old pulmonary abscess or bronciectasis Duration twelve years Pulmonary affection of undetermined nature base of left lung Signs of cavity no adhesions Exploratory puncture axillary line negative five injections of one-fourth or one half tinct. of iodin, second puncture at same point yields a few drops of very fetid pus Died three weeks after of purulent pleurisy

Case 15 1886 Rocket, 1886 Wid Abscess Resection Recovery

Case 16 1886 Wiener Mer Med Presse 1886, p 1235 Male Chronic abscess base of right lung pleural adhesions Incision in sixth intercostal space pneumotomy and drainage Death eight days after, abscess communicating with abscess of liver

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[51] Marine Hosp Rep., Washington 1879 p 246

* Cent f Chir vi p 171

† Ann Surgery, St Louis, 1890, xi p 43

Case 17, 1887 Quincke, loc cit , p 20 and 21 Obs 2 at Berlin Klin Woch 1887, p 337, et in hasten loc cit Male, 26 years Chronic abscess pneumonia two years before, base of left lung posteriorly No signs of cavity no adhesions Incision zinc cl 2 paste in ninth intercostal space, repeated several times resection of 4 cm of ninth rib puncture incision with thermo-cautery , treatment lasted three months Pus is voided by wound for three weeks after operation, recovery with fistula Saw case twelve years after has a fistula which secretes a little

Case 18, 1887 Runeberg, Deut Archiv 3, Klin Med , 1887, p 91 Male 33 years Acute abscess five weeks, chronic pneumonia, base of right lung beneath spine of scapula No signs of cavity, adhesions exploratory puncture Resection of sixth rib on axillary line incision of a superficial abscess irrigation with carbolic and drainage Recovery in two and a half months

Case 19 1887 Thiriar, Bull Acad de Med de Belgique, 1887, No 10 Male 22 years. Pulmonary abscess, hemoptysis, base of left lung posteriorly adhesions two negative punctures Resection of fifth, sixth and eighth ribs, large resection horizontal incision extending from 15 cm of axillary line to angle of vertebral column along eighth rib a vertical incision 5 cm from vertebral column opening of cavity with thermo-cautery Recovery

Case 20, 1887 Zieluvitz, Deut. Med Woch , 187, Vol 13, p 239 Male, 15 years Empyema abscess of lung found at operation for empyema Morbid pneumonia, three months later an empyema was found, lower left lobe Resection of sixth and seventh ribs, exudation cleaned out, irrigation abscess cavity opened along fistulous tract through empyema incision, opening tamponed with iodoform gauze empyema cavity tamponed Patient cured in eight weeks

Case 77, 1887 Zieluvitz Deut Med Woch 1887, Vol 13, p 239 Male 15 years Empyema with abscess of lung, abscess of lung healed was found at operation for empyema a few weeks before empyema was opened Seventh rib resected at a second operation for the empyema, cavity was cleaned out, healed abscess cavity was discovered Recovery complete in six weeks

Case 21 1888 H N Davis, London Lancet,, Vol 2, 1888 p 419 Male 21 years Abscess of lung Duration from beginning of sickness, about three years Subacute pneumonia of left side, a year later consolidation of right lung right side Signs of cavity Positive puncture in fifth interspace anterior axillary line Incision, upper border of sixth rib trocar and canula introduced, a quantity of fetid pus removed cavity washed out twice daily with carbolized col for three weeks Recovery, one and one-half months after operation cavity was closed patient completely recovered and well and at work five months after

Case 22 1888 Godley Brit. Med Jour , 1888, Vol 2, p 880 Abscess, no adhesions Suture of the two pleuræ, pneumotomy Death three days after from abscess of other lung

Case 23 1888 Quincke loc cit pp 6 and 7, Tab 1 a, Obs 5 Male 32 years Acute abscess Duration four weeks A typic pneumonia ten weeks before base of right lung posteriorly No signs of cavity no adhesions Paste of zinc cl 2, in eighth intercostal space resection of 5 cm in eighth and ninth ribs new application of zinc cl 2 paste nineteen days after exploratory puncture abscess opened with thermo-cautery 600 c cm of pus removed treatment had lasted five weeks Complete recovery in four months

Case 24, 1889 Cummins A British Med Jour , 1889, Vol 1 p 299 Female 32 years Abscess of lung hemoptysis Duration six months There was dulness of clavicular and infra-clavicular regions of left lung increased vocal fremitus fluctuation between eighth and ninth ribs on axillary line Oblique incision, two inches in length over eighth and ninth ribs, a dram of pus evacuated by means of probe an opening was found between ribs, this was dilated by forceps and fingers 3-4 oz of fetid pus escaped air passed in and out of cavity with respiration and expiration pus discharged freely, lost fetor expectoration diminished finger inserted every two or three days Recovery Patient began to improve and left hospital, re-admitted a few months later and died

Case 25 1889 Delpratt Brit Med Jour , Vol 1, p 470 Male, 33 years Abscess of lung Calculus pyelo-nephritis base of left lung adhesions Pneumotomy without costal resection drainage Drainage tube removed at the end of three months recovery in six months

Case 26 1889 Mosetig Moorhoff, Wiener Med Presse, 1889 p 1 Male 22 years Abscess following a traumatic fistula Duration three years Cause gunshot wound of chest base of left lung adhesions Incision three months before operation had resected fourth and fifth ribs diagnosis an empyema pneumotomy enabled the operator to remove three fragments of ribs located in the parenchyma In seven days wound was nearly healed, then Jacksonian epilepsy appeared which proved fatal three weeks after the operation

Case 27 1889 Selby Brit. Med Jour Vol 2, p 766 Male, 26 years Pulmonary abscess axillary line right side at level of fifth rib no signs of cavity at time of operation adhesions Two negative exploratory punctures third puncture below preceding strikes pus Resection of one and one and one-half inches of fifth rib no pus in pleural cavity, lung hard and congested abscess was not incised Fetid expectoration, signs of cavity at base of right lung recovery

Case 28, 1889 Jonq Reder Tyds f 13, 1889 in Quincke Witt aus greoz geb 1895 1 obs , pp 6 and 7 Male, 33 years Acute abscess, lasting several days pneumonia on fifteenth day base of left lung Signs of cavity pleural adhesions Exploratory puncture positive aspiration lavage injections of iodin , abscess 5 cm below surface Recovery

Case 29, 1890 Herbert Hawkins, Lancet, 1890 Vol 2, p 1330 Male, 14 years Abscess, expectoration fetid duration three weeks pneumonia left axillary region Signs of cavity adhesions there was a consecutive purulent pleurisy Positive puncture, pus at depth of 5 or 6 cm Incision without costal resection adhesions pneumotomy drainage Recovery but two days after patient had purulent pleurisy empyema Recovery in seven months

Case 30, 1890 Hoffman, Deut Med Woch , 1890 p 1156 Male, 24 years Fetid metastatic abscess duration several weeks otitis media and pyemia base of right lung posteriorly No signs of cavity, adhesions Positive exploratory puncture Costal resection pneumotomy drainage Recovery in seven months

Case 31 1890 Liedaird Lancet 1890 Vol 1, p 964 Pulmonary abscess two and one-half months pulmonary affections undetermined left base axillary line Signs of cavity, adhesions Exploratory puncture in fifth intercostal space positive Incision at level of puncture resection of sixth rib, flow of pus, dilatation of wound cavity covered with calcareous masses, irrigation with boric acid produces coughing spells Died five days after from hemoptysis Necropsy cavity size of goose egg no bronchial communication recent tuberculosis

Case 32, 1890 Ramsay Obs 3, Annals of Surg 1890 Vol 6 p 34 Female 17 years abscess Duration one month Measles and pneumonia one month before to left Signs of cavity Resection of third, fourth and fifth ribs opening of cavity with thermo-cautery tamponing Septicemia in two months death Necropsy Ramsay says there were multiple abscesses

Case 33, 1890 Ramsay Obs 4 Annals of Surg , 1890 Vol 6, p 34 Abscess, few months duration, typhoid fever, inferior lobe of right lung Resection of third fourth and fifth ribs under median line pneumotomy with thermo-cautery, little pus escaped, tamponing Perfect recovery patient has been able to resume work

Case 34, 1891 Green, Lancet, 1891, Vol 1, p 193 Male 6 years Acute abscess eight days' duration pneumonia of five weeks' standing, base of left lung Puncture in fifth intercostal space in axillary line Incision pneumotomy on trocar, drainage Recovery in twelve days

Case 35, 1891 Huber, Med News 1891, Vol 59 p 455 Male, 4 years Acute abscess six weeks' duration, pneumonia, left summit forward No signs of cavity adhesions Incisions in third intercostal space without costal resection exploratory puncture confirmative, dilatation of puncture drainage Recovery in eight months

Case 36, 1891 Indiania, Med Gazette 1891 Calcutta in Morillon, These Paris, 1897, p 5, des Tableaux Male, 35 years Abscess of lung opened and fistula, fistula going from below up back toward axilla four months' duration Located at base of right lung posteriorly adhesions Resection of eleventh rib posteriorly, hemorrhage from intercostal artery, three ounces of fetid pus irrigation with bichlorid of Hg Recovery with retraction of thoracic wall

Case 37, 1891 Terriet, Soc. de Chirurgie 1891, p 741 Morillon, Paris, 1897, p 62. Abscess of lung secondary to liver abscess that has opened in the bronchi, one year's duration, liver abscess dysenteric, located at base of right lung posteriorly Signs of cavity, adhesions Puncture behind in axillary line posteriorly in eighth interspace escape of pus Resection of eighth rib drainage of abscess improvement but accidents of retention cause symptoms of gangrene thirteen and a half months afterward new resection of eighth rib incision of lung this incision leads into a dilated bronchus curretement of this bronchial dilatation Complete recovery patient seen two years after recovery, he is a navy surgeon and can resume his work

Case 38, 1892. Andrews, Chicago Med Rev 1892 Vol 3 p 537 Male Abscess of lung several years' duration recurrent pneumonia cavity of middle lobe, pleural adhesions First puncture negative, second puncture under chloroform entered cavity at depth of 7 to 18 cm Incision, trocar inserted in the sixth interspace pneumotomy amelioration four months later because of retention, thorocoplasty was made resection of third fourth, fifth and sixth ribs in the axillary line opening of a large cavity containing calcareous débris Recovery with fistula Death four and one half years later from acute broncho-pneumonia

Case 39 1892 Ricard in Record Gazdezhop of 1892, Maus et Soc. Chir , 1895, p 689 Male, aged 36 years Suppurative interlobular pleurisy of left lobe or abscess of lung Several months pleuro-pneumonia, traumatic of three months standing right axillary region, no signs of cavity, adhesions, eleven negative and one positive puncture Resection of fourth rib on axillary line of seventh and eighth ribs on a level of last puncture exploratory puncture, opening of cavity with thermo-cautery cavity was 2¼ cm below surface tamponing Rapid improvement recovery without fistula in thirty four days

Case 40 1893 Fairchild, Chicago Clin Rev Vol. 9 No 93 in Wein klin Woch , 1893, p 633 Male 55 years Abscess of lung Pneumonia Location base No signs of cavity adhesion Repeated negative punctures, at last a positive puncture in fifth intercostal space Incision in fifth intercostal space on trocar section of 2 cm of fifth rib, pneumotomy abscess containing eleven ounces of pus, drainage, irrigation no coughing spells Uneventful recovery in one year

Case 41, 1893. Huber Arch of Baldiatrue Vol 10 1893, p 1006 Age, 13½ months Acute abscess Acute lobar pneumonia Located at base of left lung No signs of cavity adhesions Two positive exploratory punctures in third intercostal space Incision upon a trocar as psoas pleuro-pneumotomy one and one-half ounces of pus drainage abscess communicates with bronchus Rapid recovery

Case 42. E F Ingals Jour Am Med Assn Vol 27 p 397 Female aged 40 years Abscess of lung Liver abscess Located in lower outer cover of right mammary region Postive puncture fistula left along needle Five months after first seeing of patient portions of two ribs resected, lung tissue penetrated and abscess cavity opened cavity communicated with liver abscess and bronchial tubes drainage tube Failed after operation died in three weeks

Case 43 E F Ingals Jour Am Med Assn Vol 27 p 397 Male, aged 36 years Pneumonia No positive signs of a cavity Punctured between seventh and eighth ribs near angle positive drew off offensive pus another positive puncture six days after the first third punture negative Recovery

Case 44, 1893 Mouson, A , Lancet, Vol 1, 1893 p 1196 Female, aged 32 years Thrombosis of lung or mediastinal abscess discharging through lung Duration five months Sickness dated from child birth about five months before, slight cough before that Location right posterior apex Signs of cavity Incision in right interscapular region after piercing third right intercostal space, near angle of ribs, small quantity of pus Patient died twenty days after operation No necropsy

Case 45 1893 Tizebicky Wien Klin Woch., 1893 No 2, 1722 Female, aged 42 years Pyemia abscess, duration fifteen days Peurperal infection of two months' standing Location base of right lung posteriorly No pleural adhesions Punctured 500 c.c of pus Resection of seventh rib three days after incision pneumothorax Death ten hours after Autopsy No pleural adhesions, serous pleurisy in stage of resolution operation in extremis

Case 46 Chuston by Littlewood, Brit Med Jour 1894, Vol 1, p 69 Aged 12 years Two small pulmonary abscesses Resection of two ribs pneumotomy Recovery

Case 47 1894 Delageniere Arch. Provenciales da Chirurgie 1894 Janeviei Female aged 37 years Lung abscess pneumonia pleural adhesions Pneumotomy after resection of sixth seventh and eighth ribs Recovery maintained no fistula

Case 48, 1894 Kasauli, in Fabricant Chir Vieshnik, 1894 p 763 Obs 29 Male aged 36 years Abscess of lung duration eighteen months Gunshot wound of chest eighteen months before, base of left lung, adhesions Incision at time of accident incision of second and third ribs persistent fistula accidents of retention and of septicemia necessitating, eighteen months after a pneumotomy eighth rib resected opening of an abscess Recovery but still had a fistula forty days after

Case 49, 1894 Neuber Mittheil d Veseius Schleswig Holstein Aerzte 1894 p 55 in Quincke loc cit. Tab 11a pp 20 and 21 Male, aged 45 years Chronic abscess of eight months' duration Calcareous concretions in bronchi base of right lobe posteriorly Signs of cavity no adhesions Resection of eighth ninth and tenth ribs 18 cm pneumotomy six days after 500 grains of pus and calcareous concretions Recovery with persistent fistula patient is alive four and one third years after general good health, however, there persists a fistula and a cavity the size of a fist secreting a mucus liquid bronchi open in this cavity

Case 50, 1894. Rochester Med News 1894 in Morillon Th Paris 1897 p 96 Male, aged 15 years Pyemic abscess of a few days Appendicitis operated on twenty-seven days before Location base of left lung teriorly Signs of cavity Resection of 6 cm of sixth rib on posterior axillary line pneumotomy 8 c.c of sanguinal pus drainage improvement twenty three days after wound healing, no more signs of cavity

Case 51 1894 Matequon Arch gen de Med 1894 2-1, p 162. Male aged 22 years Chronic abscess hemoptysis profuse expectoration one and one-half years duration Acute pneumonia Location right apex forward signs of cavity ancient and firm adhesions two negative exploratory punctures a long time before operation A resection of 4 cm of second rib, positive exploratory puncture, incision with thermocautery of 5 cm of pulmonary parenchymia a cavity opened accidents of retention *four days after second pneumotomy, after negative puncture at base* of first cavity Recovery after relapse, which necessitated a third pneumotomy several hemoptyses profuse expectoration cicatrization in three months Patient seen in six months after in good health

Case 52 1895 Berger Soc de Chir 1895 p 716 Abscess of the lung Rib resection pneumotomy with a cautery incision 4 cm in depth no abscesses found but the hemorrhage necessitates a tamponade and suspension of operation Death several days after Necropsy The pulmonary incision is found just between two purulent cavities

Case 53 1895 Soc de Chir 1895, p 733 Monod Male, aged 35 years Abscess at base of lung Signs of cavity, adhesions Resection of the seventh and eighth ribs pneumotomy, cavity located higher up than had been thought opened with thermo-cautery after two exploratory punctures it had the volume of a walnut. Recovery

Case 54, 1895 Quincke, Mittheil aus Zrenzgeb der Med Chir 1895 p 1 loc cit, pp 6 and 7 Tab 1 Obs 7 Male aged 23 years Acute abscess three weeks after onset profuse expectoration and hemoptysis later bloody expectoration nine weeks' duration Pneumonia twelve weeks previous Location base of left lung posteriorly no signs of cavity Incision Application of ZnCl 2 paste in ninth rib intercostal space, eighteen days after resection of ninth rib exploratory puncture no cavity is found Complete cure in six weeks, rapid retraction of thoracic wall

Case 55 1895 Quincke Mittheil aus Zrenzgeb 1895 dd a B, p 1 Male aged 33 years Acute abscess of lung two months duration Pneumonia due to aspiration of mud. Location base of left lung no signs of cavity Puncture 300 c c. of serous fluid Sudden death ten days after puncture Necropsy Sero-purulent pleurisy and primary abscess of lower left lobe opening into pleura bronchi, ectasis and cicatrix of a healed abscess situated above first mentioned abscess right-sided pneumonia

Case 56 1895 Ricard, Soc de Chir 1895 p 689 *Pyemic abscess* mistaken for interlobular pleurisy Location base posteriorly, no signs of cavity partial adhesions Resection of 10 cm of eighth rib incision, partial pneumothorax abscess located higher and in the lung is incised and drained Recovery

Case 56 1895 Tuffier Soc de Chir, 1895 p 766 Obs 2. Male, age not given Lung abscess pneumonia Incision without costal resection, complete pneumothorax focus could not be opened Pyepneumothorax which was followed by empyema Death one year later Necropsy Purulent pleurisy and abscess not opened

Case 58 1895 Valton Belgique Medicale 1895 Vol 2 p 545 Male, aged 13 years Abscess of lung lung cavity fetid expectoration eighteen months duration pneumonia Location base of right lung Resection of the seventh eighth and ninth ribs, lung apparently normal after several negative punctures had been made pus was found pneumotomy with thermo-cautery after suturing lung to pleura partial cleansing of cavity drainage Death twenty days after from exhaustion

Case 59 1895 Webb J E. London Lancet Vol 1 1895 p 1140 Female aged 27 years Abscess of lung Duration, one month. Maternal history of phthisis inflammation of lung in early childhood No physical signs of cavity Puncture anterior axillary line sixth interspace twelve ounces of pus removed Trocar and canula inserted into cavity just above angle of scapula between it and vertical column directed forward and outward, fourteen ounces of pus removed drainage tube passed through canula iodoform injected Two months after operation discharge ceased two and one-half months later fluctuation was detected in the fifth interspace below the nipple incision made and pus evacuated this sinus closed in a few days ultimate recovery

Case 60 1896 Bushnell, Am Jour of Med Sci 1896 Vol. 112 p 298. *Male aged 36 years Abscess of the lung interlobular pleurisy several* weeks' duration Acute pneumonia location, base partial adhesions three positive punctures in sixth interspace Incision in sixth interspace no adhesions at this level, partial pneumothorax without gravity puncture of lung pus is immediately under the visceral pleura Rapid disappearance of pneumothorax six punctures parietal and five punctures a little later Completely cured abscess discharged into bronchi recovery in seven months

Case 61 1896. Esquerdo Rev de Cien Med de Barcel 1896 Vol 22, pp 244 250 Male aged 42 years Lung abscess pain in side and dippuella cough expectoration profuse at first purulent, later putrid slight hemoptysis fourteen months duration Exposure to cold sailor Right lung signs of cavity no pleural adhesions Incision above seventh right rib extending backward to axillary line resected 10 cm of rib sutured lung to parietal pleura explored with finger induration found thermo-cautery tip introduced into induration cavity found and contents evacuated packed with iodoform gauze fourth day, cavity washed with warm boric acid, it came through into wound solution came through into mouth irrigation repeated many times after eight days drainage tube put in Cough and expectoration became less after operation cavity became swollen at end of forty days no discharge from tube and patient has no cough or expectoration four days after this he had a slight hemoptysis ultimate recovery

Case 62, 1896. Luther Australian Med Gaz. 1896 Vol 15 p 344. Male aged 37 years Lung abscess opening into a bronchus duration, six weeks Chill and pain in left side located in left lung no positive sign of cavity pleural adhesions Incision over seventh rib center of incision midway between spine and wound in axillary line part of seventh rib resected adherent pleura lung easily broken down by finger one-half pint of pus and debris cavity douched with 40 per cent of creolin drainage Recovery great relief Cough and expectoration ceased night sweats did not recur temperature fell to 100 then to normal five days after operation gained strength rapidly perfect recovery

Case 63 1896 Sims Med. Rec 1896 Vol 49 p 500 Lung abscess Incision and drainage Recovery

Case 64 1897 Andrews in Morrillon de Paris, 1897 p 71 Male aged 17 years Lung abscess duration several months location base of left lung pleural adhesions Puncture 700 c.c of pus Resection of second rib, posteriorly pneumotomy enlargement of the puncture wound Rapid recovery seen sixteen years later cured

Case 65 1897 Andrews in Morrillon de Paris 1897 p 72. Female aged 35 years Abscess of lung several months duration Angio-cholecystitis cholecystenterostomy after mercury Location right lobe posteriorly no signs of cavity pleural adhesions Punctures of lung and liver negative Resection of two inches of seventh rib posteriorly puncture negative trocar inserted in all directions at last reached a purulent cavity internally close to the vertical column pneumotomy with cautery 150 c c of pus Recovery in ten months

Case 66, 1897 Carl Beck, N Y Med Jour, 1897 Vol 66 p 207 Male aged 31 years Duration, three months Pneumonia when 10 years of age, in November 1895 pleuro-pneumonia followed by cough and fetid expectoration Location right side anteriorly and below, signs of cavity Incision over ninth rib from post axillary line to transverse process of ninth dorsal vertebra after right eighth and tenth ribs were resected pleura was packed with aseptic gauze needle pushed into lung cavity entered, offensive pus aspirated with needle opening dilated and packed with gauze Considerable cough and expectoration after operation patient improved rapidly wound closed two months after operation

Case 67, 1897 J *Curnow, London Lancet 1897, Vol 2, p 1188* Male aged 37 years Empyema and abscess of lung twelve days duration Acute pneumonia apex of left lower lobe signs of cavity not certain pleural adhesions Positive puncture below angle of left scapula twenty four ounces of odorless pus removed Incision in eighth interspace median axillary line twenty four ounces of pus removed drainage tube Patient died next day Necropsy Right lung showed congestion and bronchitis of lower lobe of left lung adherent pleural pneumonia abscess cavity 2 cm from apex, posteriorly

Case 68, 1897 Edwards, London Lancet Vol. 2, 1897 p 1583 Female, aged 21 years Lung abscess of two months duration pleuro-pneumonia of right side, no positive signs of cavity Puncture in the eighth interspace below angle of right scapula two and one-half to three inch cavity was revealed offensive pus, incision two and one half inches long over ninth rib below angle of scapula one inch of ninth rib resected trocar and canula put into cavity and opening enlarged with finger and forceps rubber drainage tube Marked improvement three days later temperature increased and condition was critical one week after operation improvement again took place Perfect récovery six weeks after operation wound closed

Case 69, 1897 De M Moir London Lancet, Vol 1 1897 p 105 Male, aged 34 years Liver abscess ruptured into the lung liver abscess had existed about ten months Etiology Malarial perineal abscess and gonorrhea, obstructed liver abscess breaking into lung Location right lung in axilla signs of cavity Liver abscess incised and drained through the sixth interspace about two months before lung abscess was opened mass far back in right axilla over fifth rib one inch of fifth rib resected counter opening in front in fourth space below nipple opening up a secondary cavity which communicated with the first, also with liver abscess drainage tubes in both incisions taken out after seventeen days, wound closed rapidly Discharge and expectoration diminished Gradual improvement and ultimate recovery

Case 70 1897 Routier Soc de Chir, 1897 p 138 Lung abscess no signs of cavity pleural adhesions Pneumotomy after costal resection Patient getting better when observation was reported

Case 71, 1897 Ballington Arch Gen de Med 1887, Vol. 20, p 465 Male aged 6 years Pleurisy and lung abscess Pneumotomy, drainage of pleuro and abscess cavity Recovery

Case 72 Maydill, Jour Amer Med Assn Male aged 29 years Lung abscess of one month's duration rupture of lung posteriorly signs of cavity partial pleural adhesions Resection of rib over area of dulness, near angle of scapula cautery used to open cavity, escape of fetid fluid masses of gangrenous lung discharged Pulmonary edema and pneumonia of sound lung followed recovery Cavity slowly diminished in size

Bronchiectasis—A dilatation of a bronchus may be cylindrical or ampullar, local or diffuse (Grawitz) Etiologically it may be a congenital defect or anomaly (Welch) It may be intrinsic, the result of inflammation, necrosis, softening and dilatation, with retention of secretion in the bronchi, extrinsic, the result of contraction of the lung tissue or pleuritic adhesions The ampullar variety when localized is the one which concerns the surgeon The universal bronchiectasis, or the entire involvement of the bronchial tree (Osler), should not be treated surgically Habershon[52] reports autopsy with multiple gangrenous bronchiectases of all lobes of both lungs Pathologically the wall of the bronchus may be attenuated and its mucosa lined with pavement epithelium, more commonly it is ulcerated, with the lung tissue in the neighborhood involved in an inflammatory infective process As surgical bronchiectasis is secondary to other pathologic conditions its symptoms are usually intermingled with those of the original disease In the ampullar variety, however, the cough and expectoration are distinctive The patient will pass many hours without coughing, followed by a violent attack with the expectoration of several drams or even ounces of a grayish, purulent fluid, with a sour and sometimes fetid odor, the microscope reveals crystals of fatty acids, occasionally those of hematoidin, and in tubercular cases bacilli The physical signs are thôse common to cavities exploratory puncture gave positive results in 50 per cent of the cases reported (Terrier) Endeavor has been made to disinfect and medicate cavities of this class through inhalation This up to the present has not been very successful Hesse, of Schwartzenberg, showed that dust does not reach beyond the third division of the bronchus Dr

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[52] Lancet, London, April, 1894 p 1012.

Homer W Thomas has made some excellent and interesting experiments in this line, he showed that vapors were carried into the alveoli themselves and demonstrated in one of the cavities on which I operated that the cavity could be filled with a sterilizing vapor

Operation —The sacculated is the only variety that admits of surgical treatment, and in this we have again the difficulty of differentiating between a number of small cavities closely situated and a large cavity This was illustrated in a case to be related subsequently The great obstacle in the surgical treatment of this class of cases is our defective localization, and while the radiograph shows distinctly the outline of large cavities it is not yet practical with small ones Operation should be the same as that performed for abscess, though not more than two ribs should be resected Adhesions were present in 84 per cent of the cases operated Digital exploration of the lung may aid in the localization of the cavity The exploratory needle is also of service, when located the scalpel should be used to open the abscess and the cavity should be tamponed with iodoform gauze Osler[53] cites a case of death following the operation for bronchiectasis with fetid bronchitis Hofmokl[54] strongly favors the opening and drainage of these cavities and reports 42 cases, 14 cures, 3 fistulæ, 24 deaths, 1 result unknown The results of operations in this class of cases have been very unsatisfactory Roswell Park[55] collected (including Truc's) 23 cases with 9 deaths Of 38 cases collected by Tuffier there were only 9 cures, certainly not a tempting inducement for incision and drainage Leser,[56] of Halle, favors this operation I have collected histories of 44 cases of bronchiectatic cavities that were operated upon, of these 25 recovered, 19 died Of the 19 deaths, 11 were from undetermined causes, 1 from chloroform syncope, 1 from acute bronchitis, 2 from collapse, 3 from brain abscess, 1 from hemorrhage We will await with interest the results of local compression after the removal of the thoracic wall as a treatment for this class of cases, as well as the results from artificial pneumothorax either of which I believe is preferable to drainage

Case illustrating local compression, referred by Drs Homer W Thomas and Geo W Johnson Maggie C, aged 48, admitted to Cook County Infirmary October, 1897, suffering from pulmonary tuberculosis, bacilli demonstrated, evening temperature, 102–103° Physical examination reveals consolidation of both apices, râles universal, amphoric respiration demonstrated in left upper lobe anteriorly, the cavity is apparently large, extending from the first interspace to the third in the anterior axillary line, and having a transverse diameter of about three inches, the most pronounced signs are at the lower margin of the second rib, there is also evidence of a cavity in apex of left lower lobe posteriorly The belief was that the cavity was very large

Diagnosis —Bronchiectatic cavities (tubercular)

Operation —November 14, 1897, resection of three inches of the second rib, left side, without opening the pleural cavity, found pleura adherent, Paquelin cautery was used and a small cavity the size of a walnut was opened, this was packed with iodoform gauze and the lung was compressed The patient was in good condition on the table, six hours after the patient's temperature dropped to 95°, pulse became extremely weak and 160 beats a minute Active stimulation was resorted to and in eight hours she rallied perfectly The packing was not disturbed for three days, when it was removed, it was thoroughly saturated with pus and blood The dressing was changed daily thereafter The quantity of discharge was excessive at first and gradually diminished, the daily temperature was 102° in the evening and gradually dropped from that until it reached 90° The improvement, diminution of discharge, increased appetite and lowered temperature continued for about three weeks The temperature began to rise, the night sweats reappeared, the expectoration rapidly increased, evidences of the formation of cavities in the right lung appeared and the patient grew rapidly worse The cavity in the left lung was granulating and the discharge had almost ceased The patient died rather suddenly on December 15, having shown no signs of approaching dissolution to within half an hour of her death

Postmortem revealed multiple cavities in the upper lobe of the left lung and numerous cavities in the upper and lower lobes of the right lung, there was an acute necrosis and gangrene of the walls of the cavities in many places, which probably accounted for the sudden death The cavity which had been drained was almost obliterated, cicatrized and covered with healthy granulations There were numerous small cavities in close proximity to this which caused the error in the estimate of the size of the cavity at the time of operation (History furnished by Dr Clara Ferguson) Bronchiectatic cavities operated, forty six

Bronchiectatic Cavities from 1873 to 1807

Case 1, 1873 Mosler and Huter, Klin Woch, 1873, p 43 Male aged 49 years Signs of bronchial dilatation of five years' standing Incision at the upper border of the third rib to 5 cm from the right border of the sternum opening of the pulmonary cavity drainage Recovery, temporary improvement, death three months later Oct 5, 1873 Necropsy Bronchiectatic cavity of the right upper lobe, amyloid degeneration of the viscera

Case 2 1875 Riclus, Klin, Clin de la Pitie 1894, p 39, and Congress de Clinic 1875 p 62. Male aged 50 years Incision at the level of the third interspace, resection of 6 cm of third rib Recovery amelioration fistula persistent and accidents of retention Eslander's operation two months later death during chloroform anesthesia

Case 3 1882. W Koch Deutsch Med Woch, 1882, p 440 Male aged 24 years Signs of cavity in the right lower lobe four years' duration Resection of the sixth rib the pleura adherent opening with cautery of a large cavity the size of a child's fist situated three finger breadths from the surface of the lung and into which several large bronchi open Second operation, resection of the eighth rib no large cavity Third operation opening of a large cavity between the eighth and ninth ribs Recovery with marked improvement

Case 4, 1882. W Koch, Deutsch Med Woch., 1882, p 441 Male aged 24 years Signs of cavity in right lower lobe with abundant fetid expectoration, 800 to 1000 c c in twenty four hours, duration, four years Resection of four inches of fifth rib incision oblong, with cautery opening of cavity the size of a fist expression of the lung in this cavity and opening of a second cavity the size of a child's head, from which escaped the little fetid fluid Death seven days later, July 22, 1882 collapse Necropsy Phlebitis of the portal vein amyloid degeneration of the viscera, broncho-pneumonia of the left lower lobe

Case 5, 1882 Mosler and Huter, Berdl M A Cong for Med, Vol 2 1882. p 87 Pneumotomy without rib resection opening of a bronchiectatic cavity drainage Recovery without fistula cure maintained fifteen months, death March 1876, general tuberculosis Necropsy Amyloid degeneration of viscera

Case 6, 1882. Williams Marshal Lancet, 1882 Vol. 2, p 1107 Male aged 40 years Bilateral pneumonia with right bronchiectasis, abundant fetid expectoration, duration, one year Vertical incision from fourth to fifth ribs puncture of the lung with a large trocar, escape of air and fetid pus drainage Recovery moderate improvement, death July 5 cerebral accidents Necropsy Total adhesion of right pleural fistula between fourth and fifth ribs, numerous bronchial dilatations of the anterior portion of the lung the larger, the size of an orange, has been opened, no other bronchial dilatations, abscess of the right cerebral hemisphere

Case 7, 1883 Bull, North Med Archives 1883 Vol 15, p 17 Male aged 25 years Chronic general bronchitis with signs of cavity of right base, retraction of the thorax duration seven years Incision in the seventh interspace with cautery the lung examined with the finger, no cavities of large size escape of fetid gas, hemorrhage tamponade, Recovery amelioration several exploratory punctures without results, death one month later Necropsy Right pleural adhesions, multiple bronchiectases no large cavity, interstitial pneumonia in the left pleurisy and bronchial dilatation

Case 8 1883 Kazorowski, Deutsch Med Woch., Vol 9 No 29, p 432 Female aged 26 years A bronchial dilatation or purulent pleurisy Resection of the sixth rib, pneumotomy opening of a large cavity Recovery purulent pleurisy, consecutive

Case 9, 1883 Laden, Deutsch med Zeitung No 28, 1883 p 375 Patient expectorates nearly one-half liter of fetid sputa and not containing portions of lung substance, cavity in lower portion of left lung or pleura, general condition bad Incision without narcosis, large amount of fetid fluid Recovered two days later resection of rib antiseptic irrigation condition becomes better, improvement slight fistula remains

Case 10 1884 Albert Wiener Med Press, July 6 1884 p 855 Bronchiectatic cavity in lower left lobe Opened with thermo-cautery No result.

Case 11, 1884. Biss and Marshall, Med Times and Gazette 1884 Vol. 1 p 747 Male, aged 32 years Bronchiectasis of the right base bacteriologic examination negative duration six months Operation between the tenth and eleventh ribs, a puncture of the pleura, escape of air and bloody fetid liquid drainage irrigation with permanganate not tolerated Death eighteen days later cerebral accidents Necropsy Multiple bronchiectasis of the right base, of which the larger have been opened the left lung normal two brain abscesses

Case 12, 1884 Tausustein, Cent. f Chir 1884, p 290 Male aged 37 years Fetid abundant expectoration duration several years Resection of four inches of the anterior portion of the eleventh rib puncture of the lung with a trocar dilatation of the tract large cavity with resistent walls insertion of drain Recovery According to Quincke this patient met death from hemoptysis

Case 13, 1885 De Cerenville Rome Med Suisse Romande 1885 Vol 5, p 462, obs 1 Male aged 50 years Sacciform excavation of right lower lobe, puncture with a large trocar Recovery Death two months later mania refused nourishment Necropsy Pleural adhesions a regular cavity surrounded by sclerotic tissues no tuberculosis

Case 14, 1885 De Cerenville Ibid, obs 2. Cavity of the left base duration, four years Puncture with a large trocar dilatation Recovery Death nine weeks later Necropsy Irregular excavation of the left lower lobe kidneys and liver sclerotic

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[53] Johns Hopkins Hospital Bulletin, Baltimore 1889-90, Vol 1, p 109

[54] Wien Klin Woch 1893, vi p 68.

[55] Ann. Surg St Louis, 1887, v 385

[56] Lancet London, March 9 1891

Case 15 1886 Rochelt, Wiener Med Presse, 1886, p 1264 Male, aged 54 years Bronchiectasis of the right lower lobe examination for bacilli negative duration three years Operation in two sittings, first is resection of sixth rib second is pneumotomy forty-eight hours later with the cautery cavity the size of a hen's egg, drainage Recovery

Case 16 1886 Rochelt, Weiner Med Presse, No 37 Female, aged 36 years Fetid expectoration fever abscess formation at the base of left lung with excavation in the sixth interspace, incision for empyema. No amelioration of general symptoms incision made in lung pus and blood escaped patient had an attack of hemoptysis iodoform gauze tampons inserted wound washed out next day, débris was taken out iodoform tampons Fever abated cough and fetid expectoration ceased complete recovery of gangrenous excavation inside of four weeks

Case 17, 1886 Williams and Godley Brit Med Jour 1886, Vol 1, p, 590 Male, aged 67 years Bronchiectasis of the left base, duration two years Incision at the level of the eighth interspace Recovery Death from cardiac syncope one year after operation

Case 18, 1886 Williams and Godley, Med Chir Transactions, 1886, Vol 69, p 234 Female aged 21 years Multiple bronchiectasis at the level of the sixth and seventh interspace Resection of an inch of the seventh and eighth ribs puncture of the lung, drainage Recovery, amelioration

Case 19 1887 Benson and Godley, Lancet, 1887, Vol. 1, p 716 Male aged 55 years Signs of cavity upon the left in the axillary line Incision in the tenth interspace Death three days later Necropsy Multiple dilatations of the whole left lower lobe no large cavity, fatty degeneration of the heart, nutmeg liver

Case 20, 1887 Godley and Powell, Lancet 1887, Vol 1, p 716 Male, aged 35 years Duration of symptoms one year Death from chloroform syncope at beginning of operation Necropsy Bilateral general bronchial dilatation

Case 21 1887 Godley Lancet 1887 Vol 1 p 717 Female aged 29 years Bronchiectasis limited to the left base Resection of the tenth rib, opening of a bronchial cavity, drainage Recovery Not seen after leaving hospital

Case 22, 1887 Stewart Brit Med Jour 1887, p 179 and 1893, Vol, 1, p 1147 Male aged 27 Signs of cavity at angle of left scapula, duration nine years Incision, rib resection opening of a pulmonary cavity counter-opening and drainage Recovery

Case 23, 1888 Hoffmokl Soc Imp Roy des Med de Vienne January 1888 *Male, aged 32 years Rib resection, incision of the lung with* cautery opening of a cavity located at the depth of 7 cm , escape of air Recovery

Case 24, 1889 Mackey, Brit Med Jour 1889, Vol. 2, p 660 Male aged 20 years Signs of cavity of right base duration four years Intercostal incision, pleuro-pulmonary adhesions puncture, operation suspended on account of cough eight days later incision of the lung, opening of a cavity filled with pus Recovery Death six weeks later Necropsy Multiple cavities occupying the whole of the right lower lobe focus of pulmonary gangrene in the left lower lobe but no bronchial dilatation of this side

Case 25 1889 Mosler and Volk, in Hortwin Inaug Dissert., Griefsweld, 1889 Male aged 13 years Bronchiectasis of the left lobe Resection of the third rib opening of a cavity the size of an apple counter-opening between the ninth and tenth ribs at the level of which we came upon a cavity containing one and one-half liters of pus pleural adhesions Death seven days later

Case 26 1890 Osler Johns Hopkins Bulletin Vol. 1 1890 Male aged 60 years Had pneumonia several times in many years, has had pain in side and chest spitting blood at times cough and fetid expectoration, clubbed fingers, wasted, left side of chest retracted amphora sounds temperature 98 to 101 Resection of portion of fourth and fifth ribs a series of cavities opened these were packed with iodoform gauze Patient sank after operation and died on third day Necropsy General bronchiectasis, no tuberculosis

Case 27 1891 Krecke Munich Med Woch, 1891 p 399 Male aged 48 years Bronchial dilatation of the left base duration several years Exploratory punctures escape of pus rib resection incision no pleural adhesions pneumothorax makes the examination of the lung impossible Death several hours later Necropsy Multiple bronchiectatic cavities; large cavity in the left lower lobe

Case 28, 1891 Itaache, Mag forgker, 1891, No 4 in Quincke Mittheil aus d Grenz. gebdaul wehir, 1895 Vol. 1 p 44 obs 7 Male aged 17 years Sacciform bronchiectasis signs of cavity duration six years Exploratory puncture resection of 5 cm of the eighth rib in the axillary line no pleural adhesións suture of the lung to the lips of the wound eight days later opening of a cavity with cautery The immediate result was amelioration. Peristence of a fistula expectoration reduced from 900 to 100 c c Death nine months later from meningitis (abscess of the brain)

Case 29 1892. S Coupland, Lancet, 1892 Vol 2 p 869 Female aged 16 years Cavities of the left base no bacilli duration two years Operation by Pence-Gould two exploratory punctures below and above the eighth rib May 10 May 17, diffuse swelling at level of puncture incision opening of pulmonary cavity resection of eighth rib Death from chloroform syncope Necropsy Saccular dilatations of the bronchi in the left lower lobe another bronchial dilatation of the left upper lobe and the right lung

Case 30 1893 Hoffmokl Wiener Med Presse 1893 April 30 Male, aged 43 years Sign of cavity in right apex. Incision with cautery in the second interspace escape of pus drainage Recovery

Case 31 1895 Reclus Klin. Clin de la ditie 1894 p 39, Cong de Clin, 1895 p 62 Male aged 50 years Incision at the level of the third interspace resection of 6 cm of third rib Recovery Amelioration fistula persistent and accidents of retention Eslander s operation two months later death during chloroform anesthesia

Case 32, 1895 Biondi Clinica Chir Milaro, 1895 Vol 3 p 475 Male, 26 years Left interstitial pneumonia putrid brochiectasis dry adhesive pleurisy and the existence of a superficial cavity in the lower part of the scapular region Pneumectomy performed Death fifteen hours later Necropsy Postmortem purulent pleurisy from escape of bronchiectatic fluid into pleuric cavity during the operation multiple bronchi dilatations

Case 33, 1895 Abrona loc cit., ibid. Bronchiectasis fever and abundant expectoration Pneumectomy performed Recovery temporary amelioration reappearance of the irregular fever and expectoration several days after the operation

Case 34 1895 Quincke Mitt aus ten Granzg der Med Chir band 1 H T 1 1895 p 15 obs 2. Male aged 25 years Multiple bronchiectasis signs of cavity upon the left posteriorly and at the base expectoration amounted to 150 to 200 c c. duration two months Incision in eighth interspace three applications of paste of chlorid of zinc eighteen days later resection of the ninth tenth and eleventh ribs application of the paste of chlorid of zinc four days later exploratory puncture pus incision with cautery Recovery Patiént left in August 1896 and returned to his work

Case 35 1895 Quincke loc cit p 41 obs 12 Male aged 49 years Cylindrical bronchiectasis of left base Application of paste of ZnCl 2 four weeks later resection of 4 cm of tenth rib no cavity, opening of a bronchiectasis Recovery amelioration, left hospital five months later

Case 36 1895 Quincke, loc cit, p 17, obs 3 Male, aged 34 years Multiple bronchiectasis of left base retraction of thorax no signs of cavity, duration several years Incision in eighth and ninth interspace application of zinc chlorid resection of ninth and tenth ribs, wall incised with cautery Zn Cl 2 on lung Recovery, amelioration patient escaped tuberculosis

Case 37, 1895 Quincke, loc cit, p 18 obs 4 Male aged 36 years Brochiectasis of left base, secondary to a chronic bronchitis twelve years' duration Resection of ninth rib, Zn Cl 2 applied without result, later resection of the tenth rib Recovery, amelioration, death two years later

Case 38, 1895 Quincke loc. cit, p 27, obs 7 Male, aged 66 years Bilateral multiple bronchiectasis with sacciform dilatation in left base, signs of cavity, duration four years Resection of 7 cm of ninth rib, exploratory puncture without result no pleural adhesions Death, collapse before the incision of the cavity Necropsy Amyloid degeneration of viscera

Case 39, 1895 Quincke, loc. cit, p 34, obs 9 Male, aged 12 years Multiple cylindrical bronchiectasis of whole right lung no signs of cavity, duration three and one half years Resection of second, third, eighth and ninth ribs, exploratory puncture Recovery no amelioration

Case 40, 1895 Quincke, loc cit, p 32, obs 8 Female, aged 42 years Bronchiectasis of left base, sacciform and cylindrical, no signs of cavity five applications of Zn Cl. 2. Resection of tenth rib, incision with cautery Death four days later, collapse Necropsy Small bronchial dilatations, large cavity in left apex.

Case 41, 1895 Quincke loc cit., p 35, obs 11 Male aged 31 years Sacciform bronchiectasis of left base no signs of cavity or pneumonia, duration five years Incision application of Zn Cl. 2, resection of 4 cm of tenth rib, incision of the cavity drainage Recovery fistula Death during second operation hemorrhage and entrance of air into pulmonary veins

Case 42, 1895 Quincke, loc cit, p 37, obs 11 Male, aged 54 years Sacciform bronchiectasis of left base Three applications of Zn. Cl 2 paste, resection of eighth, ninth and tenth ribs, pleural adhesions Death one month later from hemorrhage

Case 43, 1895 *Walter Congress de Chir, 1895, p 101 Female aged 26* years Chronic bronchitis with bronchial dilatation of entire left lung purulent pleurisy existed in lower portion of left pleura probably consecutive to a point of pulmonary gangrene, with pleuro-bronchial fistula Resection of seventh and eighth ribs posteriorly, pleural adhesions very large resection of eighth and ninth ribs, opening of an enormous cavity, tamponade with gauze and sponges Recovery without fistula after secondary throrocoplasty

Case 44, 1896 Pierro Selbet in de Agincourt thesis de Paris 1896, p, 73 Male, aged 45 years Bronchiectasis of left base, expectoration reaching as high as one and one-half liters Resection of 5 cm of the seventh rib, opening of a large cavity the size of a nut, surrounded by other small cavities at a depth of 5 to 6 cm , escape of fetid pus, drainage Recovery, marked improvement. Death twenty months later

Case 45 Gerard Marchant in Guillmont and Herbert, Soc Anatomy 1896, p, 952. Bronchiectasis of right base Resection of seven to eight cm of fourth rib, resection of third rib, cavity located higher than had been supposed, opening of a cavity the size of a hen's egg walls of cavity bleeding two forceps left attached Amelioration. Death four months after the operation Necropsy Right lung, except at a point in the upper lobe, is entirely destroyed and perforated by irregular cavities the larger of which are the size of a walnut

Case 46, 1896 Wills, Lancet, 1896, Vol. 1, p 1563. Unilateral bronchiectasis Rib resection, several punctures negative pleural adhesions Death on the eleventh day Necropsy Unilateral cylindrical bronchiectasis without a large cavity

Case 47, 1897 Coppehkow, Wratch 1897, No 6 Female Bronchiectasis with hemoptysis Pneumotomy, opening pocket the size of a nut Recovery of hemoptysis several days later second pneumotomy opening of several cavities Cure maintained several months

Case 48 1897 Nelaton in the Busard, Paris 1897 Male, aged 34 years Repeated bronchitis during past four years and secondary bronchiectasis of left base interlobar pleurisy Incision in the sixth interspace, no resection of ribs opening of a cavity drainage irrigation incites cough Death twelve days later, coma Necropsy Multiple dilatations of bronchi of left lower lobe large cerebral abscess occupying the frontal *and cerebral lobes, but one bronchiectatic cavity opened*

Case 49 1897 Nelaton in the Brusard Paris 1897 Female Brochiectasis Pneumotomy performed Recovery amelioration for six *months, recurrence*

Gangrene of the Lung —Gangrene of the lung may be diffuse or circumscribed It has four distinct stages Necrosis, putrefaction, demarcation and elimination, and reparation It is most frequently a result of acute pneumonitis Andral found it present in 3 3 per cent of post mortems for pneumonia; Hughes found it in over 10 per cent in Guy's Hospital (Paget) In place of resolution taking place at the proper time there is a death of lung tissue The lung tissue is unable to react from the destructive effect of the infection by reason either of its character or intensity, and as a consequence gangrene results Gangrene may be the result of a foreign body in the bronchus, an inhalation infection, a septic embolus, necrosis of an infarct, etc It may be the result of an extension of infection from a bronchiectatic or abscess cavity or from a putrid bronchitis, when it is often multiple, as shown in a case by Walter D de Jersey[57] It may result from perforation into the lung of abscess cavities, as mediastinal or subphrenic, from perforation of the esophagus, with foreign bodies, as in a case reported by Pasteur, London, and operated by Bilton Pollard, in which a communication was found between the esophagus and the bronchus at its bifurcation, a gangrene of the right lung was produced, it was treated by double drainage Gangrene occurs most frequently in the lower lobe, and is most often situated near the surface of the lung, next near the center and less frequently near the interlobar septum (Tuffier) After necrosis it may undergo rapid decomposition, depending upon the presence of saprophytes In the diffuse variety an entire lobe may be involved (Trier) The separation of the slough is slow, the sequestrum may be expelled through the bronchus or through the chest wall by extension of the necrotic processes The gangrenous areas are multiple in 15 per cent of the cases

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[57] Lancet, London, Jan 21, 1892 p 27

Diagnosis —The symptoms of gangrene of the lung are usually very pronounced, though they may merge from those of a severe pneumonia When the typhoid mutterings, nervous prostration and evidence of intense intoxication continue beyond the usual limit for a pneumonia, gangrene should always be suspected If it be diffuse, the breath and expectoration soon become offensive, the latter is a brown, frothy, muco-purulent fluid, it is often profuse, the amount expectorated in one seizure of coughing is some index to the size of the cavity, there is probably no odor so offensive as that of the breath in gangrene of the lung In the circumscribed variety the gangrenous cavity may not communicate with the bronchus, in which case there would be no odor There is usually circumscribed dullness but rarely edema of the chest wall Exploratory puncture gives a foul-smelling fluid or a very offensive gas This procedure is not devoid of danger Gangrene of the tract of the needle and gangrene of the wall of the chest with emphysema followed in case of E Bull, incision and drainage were resorted to with recovery Errors in localization of cavities have been of frequent occurrence with the best diagnosticians Barry called attention to this in 1726 Tuffier found exploratory puncture positive in but two thirds of the cases He emphasized its dangers and said it should be restricted to the time of operation Lejous[58] removed the eighth, ninth and tenth ribs and detached pleura, made digital inter pulmonary exploration for a case of gangrene, presumably of the lower lobe with negative result, the patient succumbed, and post mortem showed the gangrene in the upper lobe In another case in which he made inter-pulmonary palpation he succeeded in locating the induration and opened a cavity near the spine He favors this method Dr Routier,[59] Paris, favors digital palpation, and located in this manner an inter-lobar abscess ten centimeters from the surface of the lung

The following diseases, bronchiectasis, fetid bronchitis and gangrenous pleurisy may be confounded with gangrene The history aids very much in the differential diagnosis, while the physical signs and the result of exploratory puncture may be the same in both cases Under medical treatment the mortality of this disease is upward of 80 per cent Surgery has reduced this mortality somewhat, although it is still great Sonnenberg says that in seventy-four operations 35 per cent recovered Langenbeck operated succesfully as early as 1879 (Gluck) The surgical treatment of gangrene received its greatest impetus from Bull, Copenhagen, who made incision and drainage a recognized surgical procedure, his suggestions and conclusions have scarcely been improved upon I therefore quote the following "Limited pulmonary gangrene recovers without operation or puncture, extensive gangrene cannot be cured by bronchial drainage or aspiration, as the necrotic portions cannot get out, free incision should be made when gangrene is diagnosticated If cavities are multiple, more than one opening may be necessary, operation is the only therapeutic efficient, pleuritic adhesions are an essential condition, vibration of needle with puncture is not a reliable negative symptom, nor absence of vibration positive of existing adhesions " Thomas Williams in 1877 diagnosed pneumonia followed by abscess and operated, patient died of pneumonia When this was reported, Thompson, Bryant and Mainder favored this operation in discussion, Douglas Powell opposed it Lowson reported a fatal case Berkely Hill Sedgwich and S C Smith reported recoveries, the latter gave as indications for operation 1, in cases where the gangrenous cavity is imperfectly drained through the bronchus, 2, where too much irritation is produced from the discharge, 3, in rapid emaciation, 4, unquestionable signs of cavity present

The consideration of the results obtained in operations for gangrene shows a marked improvement as time has advanced, from Truc's cases, 1879 to 1884, 13 operations, 3 cures, 2 relieved and 2 on the way to recovery, 6 deaths To those of Reclus, 1885 to 1895, 14 operations, 11 cured, 1 improved and 2 deaths

Chloroform is the best anesthetic (Tuffier) The Schleich method of local anesthesia is good, and I consider it indicated here more than anywhere else The question has been raised, should the operation be performed immediately or should we wait for certain pathologic changes to take place? The rules advanced in favor of delay are 1, we should not operate until liquefaction of the slough has taken place, 2, we must be sure adhesions are present, 3, we must remember that circumscribed cases recover of themselves The latter is the only rule of significance, when the abscess is small and there is free expectoration with the absence of toxic symptoms, time may be given with the hope of recovery without operation, though the sequestrum is rarely ejected through a bronchus It must not be expected in the early stage that a cavity will be found, at this stage it will be a succulent, boggy mass, with very offensive odor, the mass should be freely incised for drainage, but no effort should be made at excision The gangrenous cavity may have large vessels traversing it in which thrombosis has not taken place Runneberg,[60] Fenger and Hollister[61] were early and strong advocates of the free incision and ample drainage

It is not necessary to wait for the separation of the slough before operating, as the danger of retention and the extension of the process increases as time advances, there is little danger of operating too soon, as the process is usually advanced before the diagnosis is made, neither is it necessary to wait for adhesions The pleural cavity is most always infected and should be freely drained, recoveries in the a[illegible] of [illegible]s are [illegible] by Krause, Paget, [illegible] an[illegible] [illegible] gangrene is situated high up it is very desirable to have adhesions, and unless they exist at the time of operation they should be induced by exposure and tampon or suture after the method of Péan, Roux and Godlee The latter reports a case in which he adopted this method[62] It is desirable to open into the most dependent portion of the cavity, as it allows of better drainage and prevents the escape of pus into the bronchus, though it contributes little to the healing, as this is accomplished by cicatricial contraction If the gangrene be in the depth of the lung, the pulmonary tissues should be freely incised, hemostasis secured and the surface protected by the application of the Paquelin cautery The trocar and canula are not to be used in gangrenous cases, as they do not admit of sufficient drainage and are likely to be occluded by the slough Injections of disinfecting material have proven a failure and should not be used O Hewdke, of Warsaw, used various injections in four cases without a cure[63] If the operation be performed early the question arises, Shall the necrotic portion be excised, or merely incised and drained? The principles of surgery governing this appear to be the same as those governing gangrenous tissue in other portions of the body, i e, the sphacelus should not be excised, it will separate at the line of demarcation The auto separation appears to have an additional advantage, as it insures the thrombosis of the vessels and lessens the liability to hemorrhage in a location in which the surgeon is not entirely master of the situation When the sphacelus is detached, it should be carefully removed at the time of operation The cavity should not be irrigated, particularly if it communicate with a bronchus, large incision and free drainage is all that is necessary The period of time which is required for the separation of the slough is indefinite I have found in my experiments that pressure necrosis of the lung with separation of the stump after ligature takes place very slowly, it requires ten to twelve days, which would indicate that the line of demarcation forms slowly The length of time required for the closure of the cavity depends upon its size It may, however, close rapidly, as is shown by the following case

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[58] Paris Med Week, February, 1897, p 91

[59] Paris Med Week, Feb 26 1897 p 97

[60] J W[illegible]

[61] Am[illegible]

Mr F W M, age 58, was seen by me in a consultation, out of the city, Nov 16, 1893 He was in the third day of an ordinary croupous pneumonia of the lower lobe of the right lung I saw him again on the 24th, eight days later Resolution was well established, the temperature had subsided to 99 degrees morning and 100 4 degrees evening I learned later from his physician that his convalescence from the pneumonia was slow, two weeks after my last visit, Dec. 7, I was informed that he had a thrombo-phlebitis of the left leg and that he still had a slight cough, with no expectoration His temperature with the phlebitis reached 102.3 degrees His convalescence from the phlebitis was also slow On the 29th of December he complained again of pain in the right side (not severe), began to cough and had a slight muco-purulent expectoration I saw him in consultation on Jan 6, 1894, seven weeks after the onset of his pneumonia. He was having night sweats, had a dry hacking cough and slight dyspnea There was still some edema and tenderness in the leg and thigh An examination of the right lung revealed a circumscribed area of dulness two inches in diameter, beginning just below the angle of the scapula This area was sensitive on deep pressure, there was no edema of the wall Respiratory sounds were absent and vocal fremitus diminished The exploratory puncture gave one half drachm of brown, sanguino purulent, particularly offensive fluid

Diagnosis —Circumscribed gangrene not communicating with the bronchus The question arose, was the phlebitis a sequence of the pneumonia and the gangrene the result of a septic embolus from the vein, or was the gangrene the direct result of the pneumonia and the phlebitis one of the manifestations of sepsis? This is a question which I am unable to answer with any degree of certainty, but from the course of the disease I believe it was the result of a septic embolism

Operation —St Joseph's Hospital, Chicago, January 9, an incision 2½ inches long was made in eighth interspace immediately below the angle of the scapula As the pleura was approximated the tissues were edemetous, showing that adhesions existed (This tissue edema is one of the best evidences of adhesion of a suppurating focus to the wall either in the abdomen or chest, it far exceeds in value the vibration of the needle) The pleura and underlying tissues were divided so as to admit the index finger, there was an escape of two ounces of fetid pus and some gas Digital examination revealed a slough which was extracted with forceps, the cavity could be readily examined with the finger, its wall was irregular, there was no hemorrhage, it was not irrigated, a rubber drain was inserted, five days after the operation the odor had entirely disappeared and there was a clear serous discharge On the twelfth day the drain was removed and on the thirty third day he left the hospital with the wound entirely closed This illustrates how early the drainage may be removed and how rapid the convalescence Within three months he gained forty pounds and enjoys excellent health at the present time

The extremity to which these patients may be reduced before an operation, and still be able to recover, is remarkable, as may be seen from the history of many cases, the surgeon should feel it his duty to operate on them even when it appears that they would not survive the hour of operation The following is a good example

Thos K, age 22, on Sept. 9, 1897, was seized with a chill, severe pain in the left side and the usual symptoms of pneumonia On the twelfth day of the pneumonia his temperature dropped and his symptoms improved Four days later he began to cough and there was an expectoration of an offensive bloody fluid A few days after the expectoration became yellow and still more offensive The quantity increased with great rapidity, so that at the end of ten days the patient was expectorating a pint or more daily He emaciated rapidly and became very weak. This deplorable condition continued until the 29th of December, when he was sent from the hospital to his home to die Two weeks later he was seen by a very able practitioner who said he could not possibly survive three days On the 2d of March I saw him in consultation, his pulse was 156, respiration 44, temperature 97 degrees, he was coughing incessantly, he could not speak above a whisper, the odor in the room from breath and expectoration was nauseating, he was emaciated to a skeleton, resting in a semi-sitting position from which he could not be moved, his pupils were dilated and he was apparently drowning from the accumulation of fluid The nurse stated that this had been his condition for nine weeks From this history obtained from the patient's friends and nurse, and the physical signs present, a diagnosis of gangrene of the left lung was made Local anesthesia was employed and a three inch incision was made in the eighth intercostal space, post-axillary line, about a quart of most offensive pus with necrotic shreds of lung escaped, a double drainage tube was inserted he gave a few gasping respirations and I thought he was dying, the cough subsided in a few moments, his breathing became easier, and when I heard from him last, three weeks later, he was able to sit up in bed The long period of time which had elapsed between the apparent hopelessness of his condition and the time of the operation is an illustration of how long these patients stand the deleterious effects of the pus accumulation and how they rally when relieved

The complications that arise in operation for gangrene are pneumothorax and hemorrhage In the former the lung should be harpooned or grasped by the forceps and sutured to the edge of the wound Tuffier collected nine cases of hemorrhage with four deaths The hemorrhage usually followed the removal of the tampon, the quantity of blood necessary to cause death under these conditions is very small compared with the fatal quantity from external hemorrhage The greatest care should be exercised in the dressings, and irrigation should be avoided Priestley Leech[64] of Halifax introduced iodoform into the cavity through the drainage tube with good effect Tier,[65] Copenhagen, in four cases operated had three fatalities, one death from hemorrhage from drain pressure, in the successful case one-half of the lung was gangrenous, still patient recovered Seitz[66] collected nineteen cases of gangrene operated, with four recoveries, four improvements and eleven deaths Perier[67] reports continuous pleuro pneumonic suture and drainage in second interspace for gangrene, the suture was made after opening the lung, recovery

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[62] Lancet London Oct 20 1888 p 768

[63] Lancet London Feb 20 1892 p 440

I have collected 96 cases of gangrene of the lung operated upon 53 completely recovered, 3 recovered with fistula, 3 termination unknown, 37 died, 1 from cerebral embolism, 1 from meningo encephalitis, 1 from pneumonia, 17 from undetermined causes, 3 from diffuse gangrene, 2 from septicemia, 4 from pyemia, 4 from exhaustion, 4 from hemoptysis

Gangrene from 1870 to 1897 Years According to Rotation

Case 1, 1879 Cagley and Lawson, Brit. M. J., 1879 Vol 1, p 550 Male 40 years. Gangrene general condition grave, five weeks duration pneumonia of left base posteriorly Signs of cavity adhesions Exploratory puncture positive Incision in ninth interspace 5 oz. fetid pus drainage Death six days later Necropsy complete pleural adhesions cavity with irregular walls granular kidney, tuberculosis of right apex

Case 2 1880 Salomon Smith, Lancet, 1880 Vol 2 p 86 Male 60 years Gangrene Duration two months. Acute pneumonia, spurious right base posteriorly Signs of cavity Exploratory puncture putrid gas Pneumotomy at the level of lower angle of scapula no rib resection, ligation excited coughing Death eight days later

Case 3 1881 Bull Nordiskt. Archiv., 1881 vol 13 p 27 No 17 in Runeberg Deutsche Archiv für klin. Med., 1887, p 91 Female 23 years Gangrene Duration two months. Acute broncho-pneumonia left apex anteriorly Signs of cavity Puncture with a Pravaz syringe shows sero-sanguinous flood Incision two inches long in fourth interspace at level of the puncture, dilatation with forceps; some days later extraction of fragments of friable lung carbolic irrigation Recovery, several attacks of hemoptyses during following weeks

Case 4, 1882. Leyden and Koch 1882 quoted in Fabrickaut Male 24 years Gangrenous cavity in right lung, lower part putrid bronchitis Resection of sixth rib with thermo-cautery, drainage Improvement

Case 5 1882 Leyden and Koch, 1882, quoted in Fabrickaut Female 29 years Gangrenous cavity in right lung. Opened by thermo-cautery, washed out with thymol sol., drainage. Died from septicemia Necropsy suppuration near portal vein, broncho-pneumonia of opposite side

Case 6 1883 Bocchem, Cent. für Chir, 1883 No 37, p 598 and Med and Raccoglitore 1891 Vol. 2, p 561, 5th series Female 27 years Gangreous abscess of lung pneumonia right apex laterally adhesions Exploratory puncture positive. Incision in right interspace without rib resection puncture then pneumotomy issue of pus and of pulmonary débris Amelioration case reported before complete recovery

Case 7, 1883 Sutton in Mosler Wiesbaden, 1883 p 38, and in Ramsay, Obs 2 Male, 34 years Gangrene, large cavity Pneumonia five years previously left base Signs of cavity. Exploratory puncture, issue of pus Incision in sixth interspace, drainage daily carbolic irrigation Sudden death thirty first day Necropsy large cavity of the base

Case 8, 1884 Cagley and Gould, Brit. Med Jour, Jan 1884 Vol 1 p 1045 Female 12 years Acute metastatic gangrene Duration eight days Pyemia following otitis with an old mastoiditis left base posteriorly Signs of cavity Puncture with large trocar, issue of pus and débris Recovery in forty days

Case 9, 1884 Drinkwater Trans. of the Northumberland and Durham Society May 15 1884, in Revue des Sc. Méd., 1885, Vol 25, p 300 Male 60 years Acute gangrene One month duration. Chronic bronchitis acute pneumonia right apex adhesions. Incision of an abscess just below the clavicle, drainage of a pulmonary cavity through intercostal space Improvement, recurrence three month later, incision and resection of one and one-half inches of the third rib, ablation of a portion of the gangrenous lung drainage and irrigation recovery without fistula

Case 10 1884 Fenger, Med News, June 7, 1884 in Cent. f Chirurg 95 p 208 Male 36 years Circumscribed gangrene Six weeks duration. Croupous pneumonia right base anteriorly Signs of cavity Puncture with hypodermic issue of gangrenous fluid. Resection of the fifth rib, puncture of the cavity and incision with the cautery, salicylic irrigation gave rise to cough, drainage Rapid improvement drain removed on twenty-second day, fistula six weeks after operation recovery

Case 11 1884 Fermey Dublin Jour of Med. Sciences Jan 19 1884 in Revue des Sc 1885, Vol 25 p 299 Male, 30 years. Gangrenous cavity and empyema, base posteriorly Incision at the level of lower angle of the scapula Death five days later Necropsy diffuse gangrene

Case 12 1885 Gairchier and McLeod quoted by Fabrickaut, 1885 Boy Gangrenous cavity left lung Resection of ribs drainage Death after few days

Case 13, 1886 Brookhouse, Lancet, 1886. Vol 1 p 1111. Male 36 years Gangrenous abscess three months duration Spurious pneumonia, left base posteriorly Signs of cavity, adhesions Puncture with large trocar in eighth interspace, axillary line daily irrigation, cough Death seven days later

Case 14 1886 Hevilich Charité Annal 1886 Vol 2 p 230. Female 27 years. Pulmonary abscess, expectoration purulent and fetid. Three weeks duration Puerperal infection right base posteriorly Signs of cavity; adhesions Puncture positive, several punctures at the level of lower border of ninth rib, without result positive puncture in ninth interspace in axillary line Resection of four cm of ninth rib puncture 3 c.c of pus and fetid clots dilatation of the tract, we come upon the cavity the size of a fist with irregular walls Hemorrhage into cavity during operation arrested by tamponade death three days later Necropsy Puerperal metro-peritonitis and para metritis, right pneumonia and cavity of base of right lung the size of goose egg embolism of the pulmonary artery, firm adhesions another focus of pulmonary necrosis superficially in the right face

Case 15 1886 Perigmbec and de Bournism, Francais Médicale, 1886 Vol 2, p 1463 Female, 12 years Gangrene hemoptysis and cavity, and bacilli Several years duration The pulmonary affection not determined right antero-lateral region Resection of 5 cm of fifth and sixth ribs pneumotomy with the cautery at depth of 3 cm, drainage, no irrigation Complete recovery, no details

Case 16 1886 Wagner Berlin Clin Woch Sept 6, 1886 Male, 17 years, Gangrene of the lung and putrid pleurisy croupous pneumonia of left side Incision in eighth space near vertebral column, offensive odor, piece of gangrenous lung discharged through wound Gradual recovery

Case 17, 1887 Zezas Corresp Blatt of Schweiger, Aerzte, 1887, Vol 17, p 455 Male Pyemic abscess Five and one-half months duration Pyemia secondary to a foreign body in the larynx right base posteriorly Signs of cavity insufficient adhesions Incision and resection of seventh rib (6 cm), opening of cavity at a depth of 3 cm, tamponade and drainage Death fourteen days later Necropsy Pyo-pneumothorax insufficient adhesions central edema from thrombosis of the jugulars abscesses in the two lungs

Case 18 1887 Runeberg Deutsche Aschit für Med, 1887 Vol. 41 p 91, Obs 2 Female 23 years Gangrene and circumscribed pneumothorax, chronic bronchitis and multiple bronchiectasis bilateral left upper lobe anteriorly and posteriorly Signs of cavity total adhesions Exploratory puncture without result puncture in the axillary line to the fourth interspace positive Resection of 4 cm of fourth rib in post-axillary line, small cavities, no pus punctures with a fine trocar no cavity Two days later issue of pus through the tract death ten days later Necropsy communication of the pelvis with the wound, gangrenous cavity, of lower lobe cavity of the upper lobe of 4 cm into which a bronchus opens, numerous small cavities in the upper and lower lobes no more in the left lung small cavities in the right at the base

Case 19, 1887 Leyden Arch Gen de Méd 1887 Series 7, Vol 20 p 472 Gangrene puncture Incision, escape of large quantity of pus, irrigation Recovery

Case 20 1887 Guermonpuz, Académie de Médicine 1887 Vol 18, p 332 Male 23 years Gangrene Four years duration Typhoid fever, base Signs of cavity Exploratory pleurotomy resection of two ribs, two pneumotomies Recovery

Case 21, 1887 Godlee Lancet, 1887 Vol 1 p 512 Female 19 years Gangrenous abscess Fourteen days duration Pneumonia of six weeks duration left base No signs of cavity adhesions exploratory puncture Incision in the eighth interspace without rib resection cavity at a depth of 6 cm, drainage Recovery three and a half months later slight scoliosis

Case 22, 1887 Godlee Lancet, 1887, Vol 1 p 513 Female, 44 years Gangrenous abscess, eight days duration Pleuro-pneumonia of twenty four days duration right base anteriorly No signs of cavity; adhesions Incision in the seventh interspace above the nipple no rib resection, drainage Recovery, six weeks after opening of an abscess into the colon (Quincke) necessitated between a gangrene or an empyema.

Case 23 1887 Dubmeil, Gaz Hebd des Sc Méd de Montpellier 1887, p 517 Female 25 years Chronic gangrene, duration fourteen months Broncho-pneumonia, hemoptyses no tubercle bacilli right base posteriorly Signs of cavity adhesions Puncture with fine trocar for the diagnosis of adhesions. Incision resection of one and one-half cm of the sixth rib pneumotomy opening of a series of cavities of the size of a hazel nut drainage, boric acid irrigations incite cough and suffocation Death one month later without improvement.

Case 24, 1888 Koch in Openchowski Wratsch 1888 p. 743, in Zeit für Klin Med 1889 Vol 16 p 393 Male 30 years Gangrenous abscess, four months duration pneumonia four months previously right base between the post-axillary and mammary lines Signs of cavity adhesions Two exploratory punctures negative one month and three weeks before the pneumotomy Resection of fifth and sixth ribs (10 cm), opening of a cavity at a depth of 2 or 3 cm the size of a fist, gangrenous focus in an old abscess cauterization with the thermo-cautery Recovery irrigation with permanganate of potash excites cough drains removed thirty six days after the operation eighteen months after recovery slight scoliosis and scar depressed respiration, feeble on the operated side

Case 25 1888 O Keel Lancet 1888 Vol. 1 p 622. Pulmonary gangrene, several weeks duration pleuro-pneumonia right base adhesions Pneumotomy Recovery

Case 26 1888 Pollard in Pasteur Chir Soc of London 1888 in British Med Jour 1888 Vol 2 p 279 Male 7 years Gangrene Three weeks duration Pneumonia probably secondary to a foreign body right apex anteriorly Signs of cavity Incision in the second interspace, enormous cavity counter-opening in sixth interspace Death on thirteenth day Necropsy Cavity occupying one-third of the center of lung (the three lobes affected), esophagus adherent to the right bronchus and communicating with the same cause of this communication unknown

Case 27 1888 Page London Lancet 1888 Vol 1, p 572 Male, 13 years Pulmonary gangrene with hydropya pneumothorax, run over by a car Signs of cavity probably due to pneumothorax Aspiration, 20 ounces of sanguinous serum Pleura opened and tube inserted in fifth left interspace in mid axillary line offensive pus evacuated tube taken out about one month after operation immediate improvement, discharge lessened daily piece of pleura and lung discharged, complete recovery

Case 28 1888 Pasteur Brit Med Jour 1888, Vol 2 p 879 Male 7 years Gangrene of lung four weeks duration, insidious onset but had developed rapidly right upper lobe Signs of cavity Cavity incised out extreme of right second space one inch from sternum large quantities of gangrenous lung and putrid fluid were expelled cavity reached to sixth rib opening made in sixth space and drainage tube inserted cavity washed out twice daily pus appeared later Next morning patient much relieved expectoration small quantities of frothy spits free from pain improvement not maintained after ten days fetor and temperature reappeared patient sank rapidly three days later Necropsy Huge cavity occupied anterior one-third of lung (right) lined with thin layers of granulation tissue pericarditis present esophagus adherent to bronchus commenced between esophagus and right bronchus

Case 29 1888 Seitz Inaug Dissert Würzborg 1888 Male 35 years Acute gangrene five weeks duration typhoid fever six weeks left base posteriorly Signs of cavity adhesions Resection of seventh and eighth ribs 4 cm incision of lung with bistoury cauterization drainage Death twelve days after a second cavity containing 200 grams was discovered Necropsy A right pulmonia and cathesia

Case 30 1888 Shewen Aust Med Gaz. Sydney, 1888-89 Vol 8 p 173 Gangrene pneumotomy Recovery

[illegible] 31 1889 Bastcanelli Bull de Soc. Lanc de Osp Roma 1889-90 [illegible] Female 34 [illegible] Acute gangrene duration one month [illegible] lowing [illegible] ht base axillary line Resection of [illegible] in a [illegible] ncture cavity 1[illegible] cm deep irriga [illegible] th fourteen hours later coma

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[64] Lancet, Jan., 1894, p 87

[65] Cong Inter Med Copenhagen, 1884, Vol vii, p 146

[66] Wurtzberg Aschaffenberg 1888, Schlippner W & C

[67] Lancet London, 1892, p 777

left hemiplegia Necropsy Embolism of sylvain artery, thrombosis of a pulmonary vein.

Case 32 1889 Freiberg Meditzina, St Petersburg, 1889 Vol. 1, No 50, in Chictuertink, 1894, p 763 Observation 41 Male 26 years Fetid abscess with hemoptyses two months duration. Acute frank pneumonia left base posteriorly Signs of cavity, doubtful adhesions Incision internal to the lower angle of the scapula resection of the sixth rib, pelves thickened where there has been applied a paste, enlargement of the opening with the cautery cavity 3 cm deep, into which the bronchi opened, drainage and iodoform gauze Death sixteen days later septicemia Necropsy Purulent and hemorrhagic pleurisy septic lobar pneumonia multiple adhesions the cavity the size of a fist.

Case 33 1889 Ramsay Annals of Surg, 1889 Vol 2, p 144, and 1890, Obs 2. Male 25 years Gangrenous abscess four weeks duration Injury by forearm of thorax and lungs axillary region and anteriorly Signs of cavity, adhesions Thoracotomy, resection of the second third, fourth, fifth, sixth and seventh ribs pneumotomy issue of pus and of débris of garments Recovery

Case 34, 1889 Smith, S C, Lancet 1889, Vol 2 p 113 Female 39 years Gangrenous abscess duration five weeks Pneumonia for three weeks right base posteriorly Signs of cavity adhesions Exploratory puncture at the angle of scapula without result Incision without rib resection at lower angle of scapula dilatation of a focus opening of a small cavity Recovery with fistula in four weeks

Case 35 1889 Von Openschouski, Zeitschrift für Klin Med Berlin, 1889, xvi, 393 and 398 Male 30 years Lung abscess and gangrene three weeks after onset coughed up cup of fetid pus no tubercle bacilli four months duration Exposure and cold right side middle lobe Signs of cavity pleural adhesions Negative puncture on right side repeated punctures a week later give negative results Incision between mammillary and hind axillary line over fifth and sixth ribs were excised to extent of 10 cm opened directly into lung with thermo-cautery at depth of 2 or 3 cm cavity was opened, patient coughed and emptied out of wound a greenish, fetid pus lining of cavity suspended with fingers cavity irrigated with dilute potassium permanganate sol., drainage and antiseptic packing wound irrigated twice daily at first and daily later Recovery patient discharged as cured seven months after admittance

Case 36 1889 Walsham (Symonds) St Bartholomew Hosp Reports 1889 Vol 25, p 253 Male, 33 years Acute gangrene seven weeks duration Pneumonia aspiration of material (submission) left base posteriorly Rib resection drainage and irrigation Improvement death five weeks after, hemoptysis from the pressure of the drain Necropsy Cavity diminished in size

Case 37, 1890 Anderson Am Pract and News Louisville 1890 Vol. 10 p 10 Male 32 years Gangrene cavity forty five days duration Pneumonia lower lobe Puncture in sixth interspace one inch behind axillary line pus Incision two inches long over seventh interspace, one inch behind axillary line down to intercostal muscles inserted trocar five inches long blood inserted needle and obtained pus, reinstated trocar into cavity and drew off one pint pleurant matter dilated opening with forceps introduced rubber tube irrigated next day some fluid passing into trachea Recovery cough ceased.

Case 38 1890 Ramsay Annals of Surg 1890 Vol 2, p 34 Male 32 years Gangrene Acute pneumonia, *right base posteriorly Signs of cavity* adhesions Exploratory puncture positive Incision and resection of 3 cm of seventh rib, puncture incision above the trocar with the bistoury and forceps issue of gangrenous liquid, drainage Recovery in six months the drain removed the seventh day but was replaced on account of retention no fistula

Case 39 1891 Fenger and Hollister München Med. Woch. 1891 p 8 Male 34 years Gangrenous abscess Suppurating hydatid cyst lower lobe Signs of cavity Exploratory puncture Incision of the third interspace anteriorly counter-opening in fifth interspace in axillary line Recovery in six weeks

Case 40 1891 Krecke München Med Woch 1891, Vol 38 p 399 Male 20 years Gangrene of lung, purulent pleurisy Stricture of esophagus from alkali poisoning unable to pass *tongue right* side empyema and gangrene lower lobe Esophagotomy, external resection of ribs for empyema gangrenous area was opened cavity discovered the size of a chicken's egg Patient died six hours later

Case 41 1891 Krecke, München Med Woch 1891 p 399 Female 15 years Gangrene Stricture of the esophagus, treatment by esophagotomy right base posteriorly Pneumotomy Death from exhaustion. Necropsy Multiple abscesses in the left lung the right cavity cicatrizing

Case 42 1891 Porter Journal of Am Med Ass'n 1891 Vol. 16, p 335 Young female Gangrenous abscess Grippe after confinement left base Signs of cavity adhesions Incision and rib resection irrigation drainage Complete recovery

Case 43 1891 *Ochler München Med. Woch 1891 p 713 Male 30 years* Chronic gangrenous abscess two years and seven months Pleuro-pneumonia two years previously expectorate gangrenous and hemoptoic left base posteriorly No signs of cavity except for one month no adhesions Resection of the seventh rib pneumothorax the operation abandoned drainage of the pleura pneumothorax absorbed within a few days four weeks later a new incision at the same point and depth of 5 cm in the lung the cavity opened spontaneously into the liver two days later drainage Recovery purulent fistula one and a half years later the patient has been troubled since his fistula closed (fetid sputum fever)

Case 44 1891 Porter Journal Am Med. Ass'n, 1891 Vol 16 p 335 Male middle-aged. Gangrenous abscess left base Signs of cavity abscess contains gas adhesions Incision and rib resection irrigation drainage Complete recovery

Case 45 1891 Thue Nordiski Magaz. 1891 p 771 in Johnesbericht 1891 Vol 11 p 445 Male 37 years Gangrene Acute bronchitis and double pleurisy right apex partial adhesions insufficient Resection of the third and fourth ribs lungs fixed in the incision by sutures because of the insufficiency of the adhesions Purulent pleurisy death three and a half months later Necropsy Purulent pericarditis

Case 46 1892. De Cerenville and Roux Rev Méd de la Suisse Romande 1892 p 233. Male 53 years Acute gangrene four weeks duration Bronchiectasis left base anteriorly and in axillary line disseminated foci. Signs of cavity Pneumotomy in extremis resection of fifth rib axillary line opening with a cautery a large cavity Death a few hours later Necropsy Bilateral bronchial dilatations gangrenous cavity of left base

Case 47 1892. De Cerenville and Roux Rev Méd de la Suisse Romande 1892, p 229 Male 18 years Acute gangrene eight weeks duration Grippe in 1889 bronchitis right base posteriorly Signs of cavity partial adhesions Puncture serous fluid Resection of 6 cm of ninth rib partial pneumothorax lung grasped with forceps immediate suture of two pleura purulent pleurisy eight days later puncture pus pleurotomy sixteen days later complete pneumothorax second pleurotomy Recovery seen nine months later cured with excavation.

Case 48 1892. De Jersey W B., Lancet Vol. 1 1892, p 21 Child 21 months Gangrene of lung six weeks duration. Pneumonia, history phthisis left side No signs of cavity positive pleural adhesions Puncture in left chest rib sixth space axillary line, and in same space to angle of scapula, pus was withdrawn Incision in sixth space between post and mid axillary lines, one dram of pus of fetid odor escaped temperature fell after operation Death three days after operation Necropsy Left lung solid tubes thick and containing pus scattered particles of gangrene bronchitis

Case 49 1892 De Beurmàn, samé Female 12 years Gangrene Broncho-pneumonia or suppurative interlobar pleurisy middle lobe of right lung Signs of cavity Resection of fifth and sixth ribs incision with thermo-cautery through 3 cm of lung tissue large drain, irrigation Recovery

Case 50 1892. Delagruien, Cong Trans de Chir, 6 1892 p 583 Male 37 years Gangrene of lung ten months duration Fall upon chest base of left lung Trocar finds pus, puncture at level of ninth rib Resection of seventh eighth and ninth ribs in their entirety from posterior angle opening of abscess, escape of one-half liter of greenish, fetid pus irrigation of cávity with 1 óz Cl 1 to 2000 drainage Recovery drainage tube removed twenty seven days after recovery, fistula

Case 51, 1892 Hagen, Thomwratch, 1891 and Meditzina, St Petersburg 1892, Vol 4 p 455 Male 32 years Gangrenous abscess Fibrinous pneumonia right base anteriorly No signs of cavity adhesions Exploratory puncture fetid pus Incision of 5 cm in the fourth interspace Recovery in one month

Case 52, 1892 Monod Soc de Chirurgie 1892 p 578 and 1895 p 733 Male, 48 years Acute gangrene twenty days duration Pneumonia two months duration left base posteriorly Signs of cavity, adhesions (not diagnosticated) Exploratory puncture in ninth interspace negative puncture in eighth interspace positive Pneumotomy without rib resection at the level of eighth interspace, abscess situated at depth of 10 cm Recovery in one and a half months

Case 53 1892 Perier and C Paul Bull Acad de Méd, 1892, Vol 27, p 375 Male 58 years Gangrene four months duration Bronchitis and gangrenous septicemia seven months previously left apex Signs of cavity loose adhesions Incision in the second interspace, focus and depth of 2 cm containing 60 c.c of pus drainage (naphthol camphor) Recovery in fifty days

Case 75 1893 White, Medical News, 1893 Vol 62 p 38 Female 30 years Chronic gangrene (first focus) second focus three and a half months since three and a half months duration Old infectious pneumonia acute pleuro-pneumonia, right base anteriorly and posteriorly *Signs of cavity*, adhesions Exploratory puncture positive Incision in sixth interspace, two ounces of fetid pus, irrigation drainage incision of rent in post-axillary line sixth interspace issue of several ounces of fetid pus and fragments of gangrenous lung Cured two months drain removed, cured in eight months observed two years after cured.

Case 54, 1893 Hofmakl, Wiener Klin Woch, 1893 Male, 25 years Gangrenous abscess putrid bronchitis one month duration Bronchitis left apex anteriorly Signs of cavity adhesions Incision in the second interspace, cavity not opened, six days later resection of 8 cm of third rib puncture of lung at third puncture issue of air and secretion upon dilatation of tract hemorrhage arrested by tampon. Recovery in one and a half months without fistula

Case 55 1893 Tizebicky Wiener Med Woch, 1893 Nos 21 and 22 Male 58 years Chronic gangrenous abscess three months duration Traumatic pneumonia three months previously right base anteriorly Signs of cavity, adhesions Exploratory puncture Resection of the fourth rib (4 cm), two days after the puncture opening of a gangrenous cavity Death sixteen hours later

Case 56, 1894 Grube, in the Clin Viestinik 1894, p 63 observation not published Male 42 years Gangrenous abscess no bacilli of tuberculosis two years duration Fibrinous pneumonia, right upper lobe anteriorly, thorax retraction Signs of cavity adhesions Incision in second interspace exploratory puncture with hypodermic needle issue of pus incision of parenchyma with cautery to depth of 6 cm, small insignificant cavity five days later the larger cavity opened spontaneously *through the incision no drainge strand of gauze Recovery he left* hospital one and a half months later with a wound on its way to cicatrization

Case 57 1894 Habershou, Lancet 1894, Vol 1 p 1012 Male 32 years Gangrene of lung six months duration Syphilis left apex and right base advanced toward bases Signs of cavity pleural adhesions Positive puncture Portion of rib resected, but little pus obtained. Patient died a short time after operation. Necropsy Right lung firmly adherent posteriorly pleura thickened extreme apex fairly healthy, though emphysematous posterior two-thirds of lung a series of red eating cavities in left lung broncho-pneumonia gangrenous patch tubercle bacilli found also giant cells

Case 58, 1894 Priestly, Teck Lancet Vol 1, p 87 Male 22 years *Chronic abscess complicated with secondary gangrene four months duration* Pleuro-pneumonia six months duration left side anteriorly No signs of cavity adhesions Incision in third interspace multiple punctures (5) negative puncture in second interspace the second puncture brought pus incision with the trocar dilatation with the forceps of Lister pus drainage Recovery after having hemoptyses twice during convalescence complete recovery six months after

Case 59 1894 Mackay Inter Col of J F M and S Melbourne 1894, Vol 1, p 52 Male 12 years Gangrenous abscess hemoptysis, Several days Acute pulmonary affection of five weeks duration no diagnosis right base antero-laterally No signs of cavity adhesions Puncture negative Incision below the lower border of the scapula resection of two ribs adhesions multiple punctures in all directions at last upon *finding a small* cavity the size of a walnut containing gangrenous débris this cavity was incised Death hemoptysis Partial Necropsy (lung only) The upper lobe normal the lower and middle lobes adherent a cavity the size of an orange opened separated by thicknesses of 3 mm five or six other small abscesses of lower lobe abscess of the middle lobe

Case 60 1894 Rodman Am Prac Louisville May 5 1894 in Chir Am 1895 Young male Acute gangrene Infectious pneumonia following a fracture of the ribs Incision and resection of sixth rib twenty days after the accident (four inches) pus and pulmonary débris repeated tamponade Recovery

Case 61 1894 Rochet no date, given immediately under another dated May 1894 Local gangrene Resection Recovery

Case 66 1894 Rochet Inaug Dissert Kiel 1894 Male 28 years Gangrenous abscess gangrenous pneumonia three weeks Old bronchial dilatations third interspace anteriorly right base posteriorly Signs of cavity no pleural adhesions One puncture in the ninth interspace negative one puncture in the third interspace anteriorly positive Application of a paste of chlorid of zinc resection of 3½ cm of the third rib spontaneous opening of the cavity ten days later ten weeks later the same operation posteriorly at level of fifth rib opening of cavity on seventh day *Death two days after opening second cavity* Necropsy Old bronchial dilatation broncho-pneumonia cachexia the patient improved after first operation failed after second

Case 62, 1895 Bazy, Soc de Chirurgie, 1895 p 60 Male 20 years Gangrene right base partial adhesions Incision 10 cm long parallel to the ninth rib, which is resected as well as the eighth (6 cm) digital exploration through a small opening in pleura, adhesions above the incision, second incision above the first pleural adherent gangrenous focus 12 cm deep Cured in twenty days Death three or four months later from epilepsy

Case 63 1895 Harrison, in Quincke Mittheil Aus den Greng 1895 Vol 1 p 1011 table 1 b observation 1 Female 27 years Gangrenous abscess six days duration Pulmonary embolism following puerperal fever of three weeks standing, right base posteriorly No signs of cavity adhesions Exploratory puncture Resection of four cm of the ninth rib, opening of the cavity containing 300 c c of pus Death three days later Necropsy Pyemia

Case 64 1895 Krause Berliner Klin Woch, 1895 p 347 Male 36 years Chronic gangrene nine months duration Infectious pneumonia left base posteriorly no adhesions Resection of 12 cm of ninth and tenth ribs opening of the pleura the upper lobe retracted, the lower lobe adherent to the thorax, tamponade with iodoform gauze five days later sufficient adhesions except at one point (above) opening of the cavity cavity the size of an apple, gangrenous fragments of lung two drains Recovery the bronchial fistula closed twenty five days later, three and a half months later cured a little roughness of respiration, and amplitude of thorax slightly diminished

Case 65, 1895 Krause Berliner Klin Woch 1895 p 347 Male aged 33 years Purulent pleurisy gangrenous abscess(?) three months' duration Bronchitis and right side pleurisy right base anteriorly adhesions Resection of fourth and fifth ribs in the maxillary line pulmonary fistula pneumotomy at 2 cm we come upon a cavity the size of an egg tamponade Recovery ? left the hospital three weeks after the operation wound healing

Case 67 1895 Podieze Rev Gende Chir et de Ther Jour des Praticiens Paris Nov 19 1895 Gangrene of left lung Incision 12 cm long from above down in left subclavicular region excised 3 cm of second and third ribs sutured pleural transverse incision in lung fetid pus escaped walls of cavity swelled irrigation with Thiersch sol iodoform tampon After third dressing pus lost fetor Wound healed in three weeks In forty five days after operation patient had gained thirty-one pounds

Case 68, 1895 Quincke Mittheilunzen ano der Grez geb den Medici und Chir, 1895, Bd 1 H T 1 obs 6 p 2) and Tab 2, observation 8 pp 30-31 Male aged 34 years Chronic putrid abscess duration one and one-half years pneumonia complicating grip left base and the axillary line signs of cavity adhesions Resection of the third rib in the axillary line anteriorly opening of cavity Death one and one-half hours later Necropsy Several cavities if only opened death from exhaustion recent gangrene in right pleural exudate in the right

Case 69 1895 Quincke ibid Bd I, H T I Tab 1 observation 6 pp 10 and 11 and obs 1 p 8 Male, aged 33 years Acute gangrene (gangrenous abscess) duration four weeks acute pneumonia two and one-half years right base posteriorly signs of cavity adhesions Exploratory puncture issue of pus Resection of eighth ninth and tenth ribs (6 cm in the scapula line) H shaped incision at level of ninth rib two sutures of lung to the pleura multiple exploratory punctures without result three days later a purulent fistula formed opening enlarged with the cautery five days later rib resection drainage Recovery in six weeks completely cured in two months

Case 70 1895 Quincke ibid, 1895, Bd I Ht. I obs 5 p 23 and Tab 2 pp 28-29 Male aged 39 years Chronic gangrenous abscess with secondary bronchiectasis, duration ten months left base posteriorly signs of cavity partial adhesions ascertained by the puncture Exploratory puncture in fifth interspace axillary line pus sero-sanguinous fluid Application of paste of chlorid of zinc resection of 3 cm of sixth rib fourteen days later puncture pus, opening of the cavity with cautery Death three days later Necropsy Sero-purulent pleurisy encysted in the left multiple cavities chronic meningitis

Case 71 1895 Tuffier Soc. de Chir, 1895, p 769 obs 1 Male aged 59 years Acute gangrene fifteen days duration Infectious pleuro-pneumonia of forty five days' duration right base in axillary line signs of cavity no adhesions Incision in sixth interspace without rib resection complete pneumothorax total retraction of the lung impossible to open the lung drainage of the pleura Recovery

Case 72, 1895 Tuffier Ibid 1895 p 767 obs 5 Female, aged 19 years Gangrene of three months' duration Acute pneumonia and pyemia since three and one-half months right apex anteriorly signs of cavity partial adhesions Incision at level of third interspace no adhesions at this point separation of the parietal pleura adhesions at the level of second rib resection of 5 cm of this rib pneumotomy opening of a cavity the size of head of fetus tamponade Death fifteen days later meningo-encephalitis No necropsy at the time of operation the patient presented the accidents of gangrenous embolism of the sylvan artery this suddenly the same day as the pneumotomy and as the trephining of the head

Case 73 1895 Tuffier Ibid, 1895, pp 676 and 769 obs 4 Male, aged 60 years Acute gangrene of six weeks duration Pneumonia right base posteriorly no signs of cavity partial adhesions Incision in eighth interspace separation of the parietal pleura adhesions at level of the seventh rib resection of seventh rib, opening of a cavity the size of a fetus head tamponade Death six days later cause hemoptysis Necropsy Hemorrhage in the center of the cavity no pleurisy or pneumothorax

Case 74 1895 Tuffier Ibid 1895 p 771, obs 5 Male aged 41 years Acute gangrene of three weeks duration Pneumonia of four months right base anteriorly signs of cavity adhesions Incision below the fourth rib within the nipple no rib resection Death five days later hemoptysis No necropsy

Case 76, 1896 Duret, Arch de Medicine 1896 Vol 1 p 67 Female aged 21 years Chronic gangrene of the lung Old bronchiectasis right base posteriorly signs of cavity positive puncture Rib resection (three ribs) 7 to 8 cm incision of the pleura pneumotomy opening of a cavity the size of a hen's egg into which opened two bronchi cauterization drainage Amelioration recurrence nine months later curettage of the cavity, counter-opening drainage fistula resulted which was operated on with success four years later Complete recovery two and one half years after last operation

Case 78 1896 Meakin Brit Med Jour 1896, II p 746 Female aged 31 years Probable gangrene of pleura and lung of a few days' duration Acute pneumonia adhesions Sixth and seventh ribs resected in anterior axillary line one-half inch from each pleural cavity opened grayish black very fetid fluid escaped from lung, did not collapse lung was hard except one spot, which was doughy in this spot a forceps was plunged followed by a drainage Distress diminished steadily recovery after first few hours discharge dark red tarry quality, becoming like pus discharge after first four days was not fetid

Case 79 1896 Phillips and Nash Lancet 1896 Vol 21 p 1454 Male aged 36 years Acute gangrene of one month Pluro-pneumonia right base in axillary line no signs of cavity adhesions Exploratory puncture pus blood, débris Incision in the sixth interspace resection of one and one-half inches of sixth rib gangrenous cavity débris of neurotic lung irrigation, no improvement one month later resection of seventh and eighth ribs two inches (posterior axillary line) numerous exploratory punctures without result, no cavity Recovery fourteen months purulent discharge through the wound at several relapses drain one year hemoptysis thirteen months after the operation Complete recovery - seen four years later

Case 80, 1896 Smith and Treve, Lancet, 1896 Vol 2 p 532 Male aged 40 years Gangrenous abscess of one and one-half months Acute pneumonia between inner border of scapula and spine no signs of cavity adhesions Negative exploratory puncture two days before operation Incision and resection of rib, opening of a small abscess Recovery, but later relapse and formation of a second abscess at the site of the first which is opened and drained

Case 81, 1896 Smith and Treves, Ibid p 522 Male, aged 45 years Fetid gangrenous abscess of four months duration Pleuro-pneumonia posteriorly below the angle of the scapula signs of cavity partial adhesions Incision and rib resection exploratory puncture negative cavity the size of a cricket ball, pleura not adherent at the base, protected with tampon Death twelve days after a second cavity containing 250 grams was discovered Necropsy A right pneumonia and cachexia

Case 82, 1897 Andrews in Morillon These de Paris 1897 p 71 observation 2 Male, aged 42 years Gangrenous abscess of fourteen weeks' duration Pneumonia, left base anteriorly and laterally no signs of cavity adhesions Resection of 8 cm of fifth rib in axillary line puncture, pus 8 cm deep incision and curettage of cavity during the operation syncope caused by an embolism of lung tissue Improvement the patient was lost sight of before recovery was complete

Case 83 1897 Andrews in Morillon These de Paris, 1897 p 75, obs 5 Male aged 24 years Gangrenous abscess of two years' duration Pneumonia left lower lobe signs of cavity adhesions Resection of 2 cm of two ribs in axillary line incision of lung with the bistoury cavity 4 cm deep, contained necrotic lung tissue, iodoform dressing Rapid recovery Death two years later cerebral syphilis probable cause

Case 84 1897 Bazy Soc de Chirurgie 1897 p 67 Gangrene adhesions Pneumotomy extraction of 32 grams of shreds of pulmonary sloughs Result unknown

Case 86, 1897 Jagle et Raffray in Morillon th Paris 1897 p 105, et Soc Aust 1893 Female, aged 41 years Acute gangrenous abscess, putrid expectorate thirteen days duration Acute frank pneumonia six weeks before right base posteriorly signs of cavity adhesions two negative punctures Incision in the eighth interspace (cocain anesthesia) puncture of the pleura negative incision a violent cough brings forth two to three spoonfuls of fetid pus irrigation with sublimate provokes violent cough issue through the wound two pulmonary sloughs two drains Improvement for three days death the fourth day Necropsy Cavity in the right lower lobe posteriorly into which many bronchi open

Case 87, 1897 Lapujko Soc de Med des Kiefin Wratch 1897 p 173 Female Gangrene pneumotomy cured several months

Case 88, 1897 Lapujko, Ibid Wratch, 1897, p 173 Male Gangrene pneumotomy (several fragments of lung) recovery

Case 89, 1897 Tejars Soc de Chirurgie 1897 Feb 17, and Gaz Hebd de Medicin et de Chirurgie, 1897 p 181 Male aged 50 years Pulmonary gangrene with an arterio sclerosis and general paralysis Few signs of cavity, partial adhesions inextensive at the level of gangrenous focus Resection of three ribs fourth fifth and sixth pleuro-parietal separation incision of the pleura lung held with forceps and explored; opening of a cavity the size of a hen's egg at depth of 1 5 cm suture of lung to parietal pleura Death two days later from exhaustion Necropsy No other gangrenous cavities

Case 90 1897 Tejars loc cit Male aged 33 years Pulmonary gangrene acute, eight days' duration Infectious broncho-pneumonia of two months, right base posteriorly, no signs of cavity loose partial adhesions Incision separation of the pleura pneumotomy at a point, adhesion, the cavity not found Death of infection two days later Necropsy The cavity is located in the apex cavity also at the base

Case 91 1897 D M Moie London Lancet 1897, Vol 1, p 105 Male aged 23 years Gangrene of lung of forty five days' duration Acute pneumonia of left lung adhesions Horizontal incision two inches long in fifth interspace of left side escape of fetid fluid and débris drainage tube tube removed three weeks after and wound closed one month after Complete recovery

Case 92 1897 Welkowitch, Soc de Med de Kieff in Wratch 1897 p 175 Male aged 35 years Acute gangrene of one month duration Pneumonia but no bacilli of Koch right base anteriorly signs of cavity, adhesions Resection of 6 cm of fifth rib opening of a cavity long and narrow counter-opening posteriorly at the ninth rib, which leads to a pocket the size of an infant s head these two cavities are separated one from the other Probable recovery

Case 93 1897 Northrupaud Medicle N Y Med Jour Jan 14 1897 Female aged 33 years Gangrenous abscess of three months' duration Pleuro-pneumonia influenza fetid bronchitis right base anteriorly no signs of cavity partial adhesions absent anteriorly Puncture at level of third interspace at the axillary line, many punctures below nipple without result. Incision and resection of sixth rib (3 5 cm) in the axillary line partial pneumothorax (not alarming) puncture of the lung, pus at depth of 2 cm incision with the scissors three ounces of pus and gangrenous fragments of lung second abscess above the first also opened Recovery, frequent hemoptysis during convalescence wound completely closed in three months no hemorrhage no irrigation, drainage After nine months acute extension with fetid expectorate at this time recovery without intervention

Case 94, 1897 Pitts London Lancet, Vol 2 p 915 Child aged 4 years Gangrenous abscess of six weeks' duration Caseous mediastinal glands, left side pleural adhesions Rib resected exploration failed to reveal cavity in lung Death nine weeks after operation Necropsy Caseous bronchial glands which had opened into esophagus and left bronchus tubercular glands of neck and mediastinum

Case 95 Pitts London Lancet, Vol 2, p 915 Child, aged 5 years and nine months Breath fetid temperature high hemoptysis had occurred Caseous mediastinal glands posterior part of right lung signs of cavity pleural adhesions Exploratory punctures through incision failed to reach cavity Excision of sixth and seventh ribs in right interscapular region, lung adherent Child collapsed and died several hours after operation Necropsy Caseous abscess cavity size of walnut at root of right lung opening into right bronchus caseous glands close to abscess no signs of tubercle several patches of gangrene apart from abscess cavity

Foreign bodies —The subject of foreign bodies in the bronchi is treated here after abscess and gangrene, as they frequently result in abscess and gangrene A great variety of foreign bodies have been aspirated or thrown into the bronchi The most common variety, in America at least, as taken from the statistics of Dr Weist, who collected over a thousand cases (Trans Am Surg Ass 1881), is a grain of corn, in frequency this variety is followed by inhalation of the various seeds, as melon, pumpkin, orange, etc, beans, buttons, pebbles and marbles The effects produced by these foreign bodies on the lung may be divided into primary and secondary The primary are the dyspnea, pain and coughing, the former may be mild or intense, even to death, depending on the size and location of the body, the pain is usually very severe, and is often a guide to the location of the body, the coughing is persistent, and is often associated with pain If the body be smooth and of regular outline it may prevent the admission of air to a lobe or even to an entire lung, and by the frequent efforts of coughing and the ball valve action of the body, the lung may be emptied of air and inspiration made painful and distressing, the foreign bodies are retained in their position, principally by the edema of the mucosa, occasionally by the swelling of the seed Weist's statistics show that the seeds, for the number aspirated, do the least harm they are the most difficult to find in operation, and therefore should not be operated except when especially indicated The body may be arrested in the larynx, trachea at the bifurcation or in a bronchus Numerous statistics have been published to show that the foreign body has been arrested most frequently in the right bronchus A comparison of all statistics shows that the arrest occurs in the right and left bronchus with almost equal frequency The location of the foreign body can often be ascertained by the physical signs We can at least determine which bronchus is occluded We are now greatly relieved of the uncertainty of location by the assistance of the X-ray Many methods have been suggested for the primary treatment of these cases one of the best is taking advantage of gravity early in the case, *i e*, holding the patient by the feet, requiring him to cough as deeply as possible, and slapping the chest forcibly at the time of expiration, this often forces the foreign body out of the bronchus In upward of 60 per cent of the recorded cases the foreign body was expelled in this way, as many of these cases are never recorded or even come under a physician's care, it is certain that a much larger percentage recover by this method Tracheotomy for foreign body has given very good results, but should not be practiced until other means have failed When the tracheotomy was successful in the removal of the foreign body, the mortatity was 6 per cent When unsuccessful 21 5 per cent (Weist)

The secondary effects of foreign bodies in the bronchi are even more serious than the primary, as they induce infective processes—abscess, gangrene, bronchiectasis and tuberculosis, which terminate fatally When it is a metallic or dense substance it can be readily located in a radiograph The outlines of the abscess can also be defined by this means G A Sutherland reports an instructive case of bronchiectasis, a sequence to an inhaled O'Dwyer tube The bronchiectatic cavity was opened and the foreign body was not found The patient died of hemorrhage about three weeks later Postmortem showed the tube in the right upper bronchus Multiple bronchiectatic cavities were found

The following case illustrates the secondary effects of foreign bodies

Case 1 —March, 1886, Katie M , aged 14, was brought to my office suffering from dyspnea and constant bronchial irritation, following the inhalation of a shelled peanut It was believed to be in the bronchus of the middle lobe of the right lung, the inhalation was followed by consolidation of this lobe, the expectoration was not offensive, but sero-purulent, tinged with blood Three weeks later, in a severe attack of coughing, the patient ejected the peanut The expectoration from that time was scanty but continuous, it was not offensive, the consolidation did not disappear Six months later she called at my office again, I found her suffering from an acute pulmonary tuberculosis There was a cavity in the middle lobe of the right lung and bacilli were present in the sputum Patient died two months later No postmortem was made I believe that the foreign body produced the *locus minoris resistentia* for the tubercular infection

I recall a postmortem made during my interneship in 1879, in which a 6 penny shingle nail was the foreign body and the exciting cause of the tuberculosis The literature on tuberculosis abounds with cases of this class, and the secondary results of foreign body in the lung must not be overlooked though the patient escapes the gangrene and abscess as earlier results

The presence of a foreign body in the bronchus should be a source of great anxiety until it is removed. The method of its removal has offered fruitful material for speculation and experiment Primary opening of the bronchus and trachea has been suggested and executed successfully, but the percentage of cases in which the foreign body has been found in the operation has been small, and the results of primary anterior or posterior bronchotomy or pneumotomy do not justify the operation although it often seems indicated (Truc) DeForest Willard made extensive and praiseworthy experiments on the removal of foreign bodies in animals, and came to the conclusion that bronchotomy for the removal of foreign bodies should not be attempted Of 11 operations collected by Tuffier there were four immediate deaths, and in only one of the 11 was the foreign body recovered at the time of the operation The other cases made only temporary recoveries or had fistulæ The dangers of bronchotomy are, hemorrhage, pneumothorax and infection From the results of operations and experiments we are not justified in operating for the removal of the foreign body *per se* These cases should be carefully watched, and early intervention should be made when the secondary changes have taken place, as abscess and gangrene

TUBERCULOSIS

Tuberculosis of the lung has been considered a medical and not a surgical disease In a few instances the surgeon has had the courage to open and drain tubercular cavities in the lung, in a still smaller number he has excised a portion of the lung for the removal of a circumscribed tubercular nodule Wm Koch suggested the injection of disinfectants and chemical irritants into the diseased portion of the lung, but they have been used to a very limited degree With these few exceptions, the disease has been left entirely to the care of the physician We ask ourselves, what has been achieved in tuberculosis? With the exception of a thorough knowledge of its etiology and pathology, comparatively nothing We have volumes of literature on the subject, describing its various phenomena, course and terminations From a sanitary standpoint, since Villemin in 1865 showed its infectious character and Koch discovered the particular bacillus, we are possibly lessening the number of infected, from a therapeutic standpoint we had hoped, and still hope, that tuberculosis may be cured, alleviated or curtailed in its destructive effect by products derived from the tubercular bacillus under certain conditions The results barely justify a continuation of the hope Can surgery contribute anything toward the repair of tubercular lesions of the lung? It has accomplished much in the treatment of tubercular lesions of the articular and osseous systems, its results in the treatment of tuberculosis of the peritoneum have been little less than brilliant The ideal treatment of tuberculosis is eradication, extirpation of the tubercular focus In only a few instances has the surgeon been able to attack it so as to obtain this ideal result, as in cutaneous, synovial and osteo-tuberculosis His best achievements have been obtained in cases where he merely placed the tissues under favorable conditions for repair by nature, as drainage of the peritoneal cavity with or without extirpation of the original focus of infection This necessarily demands the consideration and reparative power of individual tissues when attacked by tuberculosis Some tissues resist completely its invasion, as the fibrous tissue of tendons and fascia, others, when attacked never tend to repair, as tubercular ulcers of the intestine In still others, as the peritoneum, the reparative power or resistance offered to the advancement of the disease is great While a large percentage of the mortuary material is furnished by tuberculosis of the lung the statistics show more than an equal number in which the tuberculosis of the lung was completely cured or circumscribed and did not contribute in any way to the death of the patient So common are the evidences of repaired, cured tuberculosis in the lung that the Germans have an axiom that every man at the end has a little tuberculosis In 1000 necropsies, excluding 216 cases that died of phthisis, Osler found undoubted evidence of previous tuberculosis in 59 cases, 7 5 per cent, but Bollinger, Massini and Harris placed it very much higher, ranging from 27 per cent to 39 per cent, far exceeding those that died of tuberculosis Bouchard, in his report of postmortems, found that in over 75 per cent of persons dying suddenly there was some evidence of tuberculous lesions, active or obsolete A comparison of the postmortem evidences of repair of tuberculosis in the various tissues shows that the lung far exceeds any other tissue in the body, not excepting the peritoneum, in its ability to overcome the effects of tubercular inoculation This repair is effected by the development from fixed connective tissue cells of resisting capsules of connective tissue with sclerosis and cicatrization of the walls of the cavities These walls resist the biotic and toxic effect of the bacillus, subsequent degeneration of the encapsulated products takes place, or there is an elimination of the infected focus with its bacilli by necrosis and exfoliation, as illustrated after the use of the Koch tuberculin injections Investigation shows further, that the so-called " deaths from tuberculosis " are rarely due to the tuberculosis itself, but to secondary infections, that is, it is not the tuberculosis which kills but the mixed infection (pus and sapregenic) of the tubercular centers, the same is true of tuberculosis in other tissues Do postmortem examinations show us how the encapsulation of tuberculosis is favored or accomplished? Yes, to a limited degree Does clinical experience, surgical medical, offer any suggestions or proofs? Yes, both furnish many if they are properly interpreted Tuberculosis of the lung is primarily in the great majority of cases a local disease involving but a small portion of one lobe of the lung Ewart and Kingston Fowler described this process and showed that its extension followed well-defined routes It advances from the original pulmonary focus by continuity, through the lymph spaces and lymphatic channels and through the blood, and rarely, if ever, along the mucous surface on which the myriads of bacilli are transmitted to the mouth Pathology teaches us that the effect of the biotic and toxic stimulation of the bacillus is to produce lymphoid cells and a multiplication of the fixed and connective tissue cells of the part, they induce increased deposit of leucocytes and vascular changes, with subsequent necrosis and caseation of the center of the nodule (Baumgarten) In tissues containing epithelium these cells also proliferate and the connective tissue cells yield epitheloid and giant cells (Gaule and Arnold) Further, the tendency in most tissues in the body is to wall in the destructive process by the formation of a capsule Tubercular lesions represent reaction of the tissues to the irritation of the tubercle bacillus In the center of the foyer the irritation is sufficient to destroy the tissues, farther off the irritated tissues build a wall, which in time, makes a cicatricial barrier, plugging up lymphatics and constricting vessels Leucocytes and wandering cells are attracted by dead bacilli Living bacilli stimulate connective tissue alone (Evans) We have still further abundant proofs that this capsule is destroyed or lessened by secondary infections, that its limiting power is enhanced and favored by physiologic and anatomic quiescence Its strength and resistance are further favored by aseptic stimulation of cell proliferation in its periphery The study of the literature on repaired tuberculosis of the lung shows that there was an atelectasis and cicatrization of the pulmonary tissue in close proximity to the nodule, that there was a fibrous and cicatricial development often in the entire lobe which was repaired, that the pleura in the neighborhood of repair was greatly thickened, and effectually immobilized the lung contiguous to it, that the chest wall was contracted and motion of the diseased part was restricted In other words, the histology of the repair of tuberculosis of the lung in its entire range, from the solitary tubercle to a complete lobe, is made up of a series of defunctionalizing processes, anatomic and physiologic, in every tissue involved directly or indirectly

Treatment—Hiller, Berlin, hoped to aid the cicatrization and contraction of the lung by the injection of irritating material into the lung itself, as iodin, iodid of potassium and carbolic acid His method was tried by Ewald, Pepper and Jablovoski, they failed to obtain good results Lepine injected sublimate solution into pneumonic lungs and observed a rapid diminution of temperature and improvement in breathing Contraction of the chest wall for the cure of tuberculosis by means of cauterization of the chest was practiced by Guerin and Vidal They reported 37 good results in 44 cases Mosler tried this treatment in 20 cases and while he found great improvement in many he does not report a single cure[63] Rive injected **iodin** and iodid of potassium into the cavities with only temporary relief, he had one fatal result from cerebral embolus

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[63] Wies, vols i-ii p 82

The pathology of repair of pulmonary tubercular cavities involves certain physical conditions which are peculiar to the chest (they exist to a certain degree in abscess of the bone and brain), namely, the constant resistance of the bony framework against contraction, the effort at expansion of the cavity in each inspiratory act The best illustrations exist in large empyemic cavities The bony framework of the chest wall admits of a certain degree of contraction of the cicatricial tissue which makes up the boundary of the empyemic cavity, and then contraction ceases and the cavity remains permanent, as shown in Fig 20*a* This element was overcome by the operations of Estlander, Schede, Delagénière and their modifications, all based upon the same principle, reducing the bony resistance, all artificial means of allowing the obliteration of a cavity by cicatricial contraction and agglutination of its walls This same resistance to nature's repair exists in every pathologic pulmonary cavity in addition to the ordinary abscess conditions Allow the wall of the abscess to collapse, to empty thoroughly, and it will heal as other abscesses of the same pathologic character, this I believe is the keynote to the successful treatment of pulmonary cavities How to overcome this resistance of the chest wall was a stimulus to my investigations in lung surgery and led to the hope that not only might pulmonary cavities be obliterated by permitting or forcing their collapse, but that primary tuberculosis might be encapsulated by mechanical immobilization of the diseased portion by collapse and enforced rest of the lung as a respiratory apparatus, thus allowing the cicatrization and encapsulation of the tubercular foci, in other words, that tuberculosis of the lung might be treated as we treat tuberculosis of the joints, by immobilizing and enforcing physiologic rest, by enforcing drainage of the secondary products through the bronchi and allowing the ulcer or cavity to heal

Are we furnished any evidence from the record of postmortems that may be appropriated to support the principle that immobilization and physiologic rest of the lung is favorable to the healing of pulmonary tuberculosis and pulmonary cavities? Yes 1 Lungs that have been severely involved in tuberculosis, empyema, pneumonia, gangrene or abscess when repaired show a contraction of the chest wall in proportion to the degree of tissue involved, 2 Lungs with tuberculosis that have been compressed by pleuritis exudates, usually sequences of the pulmonary tuberculosis, have repaired the primary tubercular focus during their quiescence, 3 Lungs that have been allowed to collapse following radical operations for the obliteration of empyemic cavities (tubercular in a large percentage of the cases) have healed

That empyema is curative of tuberculosis of the lung in its early stage I believe can be readily proven The great majority of empyemas in the adult is the result of primary pulmonary tuberculosis, 83 per cent , in children tuberculosis is rarely the cause of empyema In most of the post-mortems on chronic purulent tubercular pleurisy tubercular lesions of the lung or other organs are found, but these lesions are generally quiescent and localized Empyema from tuberculosis never absorbs and rarely opens into a bronchus It is a result of mixed infection of the primary tubercular nodule in the lung extending to the pleura (Strauss) Of 164 uncomplicated cases of empyema operated by Koenig, Cabot and Runeberg, 7 remained with fistulæ and were incomplete cures, 4 died, and 9 were lost sight of before the cure was complete, all the others recovered This shows what a favorable termination empyema may have, and considering that it is secondary to tuberculosis in a great majority of cases (83 per cent) it speaks forcibly for its curative effect upon the lung Whitney[69] says "the course of tubercular empyema is peculiarly benign " In 16 cases of pleuritic, non-suppurative effusion, Netter found bacilli in all It is the prevalent opinion of pathologists that pleurisy from "cold" rarely if ever occurs Strauss quotes from German authors that "simple" pleurisy is tubercular pleurisy, the true nature of which is not recognized, tuberculosis is the usual etiologic condition in pleurisy, one can say that it represents the real cause in over three-fourths of the cases Landonzy regards pleurisy from cold as absolutely exceptional Kelsch and Villard, who investigated 16 cases, say that pleurisy is only a local manifestation of tuberculosis Chauffard and Gombault inoculated the fluid from 20 simple pleuritic exudates in guinea pigs, 10 died of tuberculosis, the negative cases do not prove that they were not tubercular Every general practitioner recalls numerous cases of tuberculosis of the lung resulting in empyema or hydrothorax in which there was a complete recovery of the tuberculosis when the empyema and hydrothorax were operated at the proper time In considering the curative effect of pleuritic effusions upon tuberculosis of the lung we do not include the advanced cases of tuberculosis in which one or more lobes are honeycombed with the disease, here, on account of the consolidation of the lung, it is impossible for the pleuritic effusion to produce collapse and compression of the cavities When I began this line of investigation I had hoped to find in the reports of the great pathologic institutes detailed accounts of the condition of the primary tubercular focus in the lung and prove my position by them, so far I been unable to find this material, as the postmortem records at my disposal have been defective in this particular I have called the attention of a number of pathologists to this point and hope shortly to be able to submit accurate descriptions of the tubercular process in the lung with empyema I do not believe that the empyema or the hydrothorax is advantageous to the tubercular process, by an inhibitory power exercised by the fluid or by a venous stasis, as suggested by Fowler,[70] of Brooklyn, in his able article, "Surgery of Intrathoracic Tuberculosis " On the contrary, from this standpoint it is detrimental, as it impairs the general condition of the patient It increases the immediate danger, but favors the ultimate result Nothnagel and Schrader do not remove the effusions primarily The force of numbers of operated cases of empyema with permanent cure of the primary tuberculosis of the lung carries conviction that the compression of the lung favors the reparative process, and in this way the pleuritic effusion is curative Quiescence of the lung greatly diminishes lymphatic circulation and thereby lessens materially the likelihood of the propagation of the tuberculosis to the other parts (W A Evans), a fact of great moment, as the tuberculosis is disseminated, from a practical standpoint, almost exclusively by the lymphatics The methods of obtaining pulmonary quiesence or collapse are 1 By permitting or forcing the collapse of the lung by separation of the parietal pleura and intrathoracic compression (extra-pleural pneumothorax), 2, by removing the bony resistance and allowing the collapse of the chest wall, thus favoring contraction and cicatrization (thoracoplasty), 3, allowing the lung to collapse by intrapleural injections of gas or fluid The third method appears to offer more than any of the others We know that atelectasis of the lung may exist for months, or even years, and the lung be again restored to its function, as shown by West's cases of six to eighteen months' compression with effusion, which were followed by immediate restoration of the lung to full size after removing the fluid, 2, the treatment is simple and painless, 3, the patients will consent when the pathologic condition is most favorable

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[69] Twentieth Century Practice of Medicine

[70] Ann of Surgery 1886 xxiv p 591

Good results were obtained in tubercular cavities with thoracoplasty by a number of authors De Cazenville and Sengler report recoveries from disease of right apex Baier reports a temporary recovery Stewart Tiday supplemented this operation with external compression with adhesive plaster Coromilas and McEwan favor thoracoplasty

I have performed the following operation for the purpose of allowing the lung to collapse over a tubercular cavity

Case 1—Stephen D, English, age 40, single, clerk, Cook County Infirmary, Surgical Ward 7 Family history Tuberculosis caused death of mother, two sisters and two brothers Has had tuberculosis for three years, is emaciated and anemic The upper lobe of right lung is consolidated, has evidence of a large cavity extending from the first rib to the lower margin of the third with a transverse diameter of two inches, has marked cracked pot sound, he expectorates two ounces of material with each seizure of coughing, râles over the upper portion of the right lower lobe behind and some râles over the upper lobe of the left lung, no evidence of consolidation in this lobe, tubercle bacilli present, patient had an evening temperature ranging from 102 to 102 5 degrees F It was decided that he was not in a condition to drain the cavity, and a compression of the lung over the position of the cavity was determined upon

Operation—Jan 9, 1898, *chloroform narcosis* Immediately before operation the patient's temperature was 100 degrees, pulse 98, respiration 28, there was a frequent hacking cough A U shaped incision was made, beginning at the sternum and the second rib, extending down to the third and then three inches to the right and up again to the second rib, the skin and muscular flaps were elevated, subperiosteal resection of three inches of the second rib, the parietal pleura was detached from the chest wall for a considerable area downward and outward, so as to allow of a greater compression of the lung at that point. The flap was replaced and retained with a deep musculo-cutaneous suture Very little chloroform was used, as the patient was somewhat cyanotic when the operation began, it was feared he might die on the table He was placed in bed and rallied rapidly

At 7 P M the day of operation pulse was 108, temperature 101, respiration 32, January 10, 8 A M, pulse 98, temperature 99 2, respiration 30, slept five hours, cough more constant and less spasmodic with considerable expectoration January 10, 2 P M, pulse 100 temperature 99 6, respiration 27 January 10, 7 P M., pulse 104, temperature 100 2, respiration 30 January 11, 8 A M, pulse 102 temperature 99 2, respiration 30, slept eight hours January 11, 8 P M, pulse 104 temperature 100 2, respiration 52 January 12, A.M, pulse 94, temperature 99 4, respiration 32, slept nine hours January 12, P M, pulse 96, temperature 99 8, respiration 34. January 13 A M, pulse 94, temperature 98 8, respiration 30 January 13, P M, pulse 96, temperature 99, respiration 32. January 14, A M, pulse 98, temperature 98 8, respiration 30, slept nine hours, marked improvement in cough and expectoration January 14, P M, pulse 100, temperature 99 4, respiration 34 January 15, A M, pulse 88, temperature 98 8, respiration 32 January 15, P M, pulse 90, temperature 99 4, respiration 34 January 16, A M, pulse 84, temperature 98 6, respiration 32. January 16, P M, pulse 86, temperature 98 4, respiration 33 January 17, A.M, pulse 88, temperature 98 4, respiration 24. January 17, P M, pulse 90, temperature 98 4, respiration 24. January 18, A.M, pulse 84, temperature 98 4, respiration 22.

From this time on his temperature, pulse and respiration have been normal, there was primary union of the wound and great depression of the chest over the site of operation. The patient's expectoration has diminished more than half, and is of a light foamy character His improvement was progressive He has gained in weight and appearance April 30 physical examination reveals an entire absence of râles and bronchial breathing on the right side, there is diminished respiratory sound over the seat of depression of the chest wall, no physical signs remain to indicate that a cavity had existed in this locality On the left side there are râles extending down to the nipple These physical signs were verified by Drs George W Johnson and W A Evans The repair of the lung which has taken place can be seen in radiograph of the right lung, no cavity exists If the lung in this case were involved to a greater degree I could have inserted my entire hand through the opening in the chest wall into the chest cavity and separated the lung from its adhesions to the wall and compressed it.

Examination July 8 shows that the tuberculosis in the right lung was entirely quiescent. There was not a râle to be heard, the cavity was obliterated, there were some râles over the upper lobe of the left lung and the upper portion of the lower lobe, the patient has had no fever and has had but little expectoration

Dr Alexander C Weiner and Dr James G Berry examined this patient with me

(To be concluded)

SOCIETY PROCEEDINGS

Association of American Medical Colleges

Denver, Colo, June 6, 1898

[From advance sheets of "Bulletin of American Academy of Medicine"]

The Association was called to order at 10 o'clock A M, at the Albany Hotel, Denver, Colo, June 6, 1898, by Prof JAMES W HOLLAND of Philadelphia, President. The Secretary announced the following members present by delegates Jefferson Medical College, Philadelphia, Cincinnati College of Medicine and Surgery, Cincinnati, St Louis College of Physicians and Surgeons, St Louis, University of Georgetown, Washington, Woman's Medical College, Baltimore, Columbian University, Washington, University of California, San Francisco, Willamette University, Salem, Ore, Creighton Medical College, Omaha, University of Illinois, Chicago, Medical College of Indiana, Indianapolis, Woman's Medical College, Philadelphia, Detroit College of Medicine, Detroit, University of Louisville, Louisville, Hospital College of Medicine, Louisville, University of Colorado, Boulder, Baltimore Medical College, Baltimore, Kansas Medical College, Topeka, Kentucky School of Medicine, Louisville, University of Minnesota, Minneapolis, Arkansas Industrial University, Little Rock, University of Iowa, Iowa City, Keokuk Medical College, Keokuk, Medico Chirurgical College, Philadelphia, College of Physicians and Surgeons, Boston, Omaha Medical College, Omaha, University of Denver, Denver, Illinois Medical College, Chicago, University of Southern California, Los Angeles, Milwaukee Medical College, Milwaukee, Barnes Medical College, St Louis, Wisconsin College of Physicians and Surgeons, Milwaukee, Miami Medical College, Cincinnati, Fort Wayne College of Medicine, Fort Wayne, Syracuse University, Syracuse, College of Physicians and Surgeons, Baltimore, Rush Medical College, Chicago, Western Reserve University, Cleveland, Gross Medical College, Denver, Woman's Medical School, Northwestern University

On motion, the President appointed the following committee to consider and report on the proposed amendments to the constitution J M Bodine of Louisville, T H Hawkins of Denver and H O Walker of Detroit.

Prof MONTGOMERY A CROCKETT of Buffalo, N Y, read an essay on "The Developing Method in Teaching Medicine" The subject was approvingly discussed by the following gentlemen, all of whom had slight modifications to suggest Prof Chas G Stockton of Buffalo, Prof John Minney of Topeka, Prof *Dudley S Reynolds of Louisville, Prof* A *Stewart Lobingier* of the University of Colorado, Prof Bayard Holmes of Chicago, Prof John V Shoemaker of Philadelphia, Prof Ernest LaPlace of Philadelphia and Prof H J Herrick of Cleveland

Professor Crockett was called on to conclude the discussion, after which the Association adjourned until 2 o'clock P M

Second Session

The Association was called to order at 2 15 P M by the President, Prof James W Holland The Secretary read the minutes of the last annual meeting, held at Philadelphia, May 31 and June 1, 1897, which were approved By request, the Secretary called the roll, twenty seven colleges answered present by delegates

The President called past-President James M Bodine to the chair, and proceeded to read his address The address was well received, and on motion the Secretary was ordered to publish it and furnish each member of the Association a copy

Prof James M Bodine, Chairman of the Committee on Constitutional Amendments, reported as follows The amendment proposed for Art III, Sec 5, extending the required hours for a year's work to 800, is not a desirable change, and your committee respectfully reports against its adoption The proposed amendment to Art. III, Sec 7, by the addition of the following "*A college not giving the whole four courses of the medical curriculum and not graduating students, but otherwise eligible, may be admitted to membership*," is respectfully approved by your committee On motion, the report of the committee was unanimously adopted and the amendment made part of the constitution

Prof Dudley S Reynolds, Chairman of the Judicial Council, reported as follows The University of Colorado having been, by recent decision of the courts, obliged to remove its medical department from Denver to Boulder, the question of retaining membership was presented to the Council The chairman advised as follows "If you keep your dues paid up, and send annually a representative to the meetings of the Association, your membership is continued until somebody shall prefer, in due form, written charges of violation of some part of the organic law of the College Association, supported by convincing evidence I would advise you, however, to make no attempt to confer degrees until you are thoroughly equipped for the completion of the required courses of instruction" This advice was accepted, and by your recent action in amending the constitution, the institution is still in every way eligible to membership

In answer to a communication of Aug 7, 1897, addressed to Secretary Holmes by Prof G M Waters, M D , Dean of the Ohio Medical University, Columbus, Ohio, the Council rendered the following decision

Aug 20, 1897

To the Ohio Medical University, Columbus, Ohio

G M Waters, M.D , Dean —For answer to your communication of Aug 7, 1897, addressed to Bayard Holmes, M.D , Secretary of the Association of American Medical Colleges, your attention is invited to the following decision of the Judicial Council in answer to your communication of Dec 22, 1895 "III The time requirements of the Association are fundamental," etc Again, in answer to interrogatories of the Ohio Medical University, of Sept. 4, 1896, the Council decided that "the whole period of time devoted to college work by the student shall not amount to less than four collegiate courses in four separate years in 1899 and thereafter, nor less than three collegiate courses of not less than six months each in three separate years, prior to 1899

"Second, you can not admit a man to the senior class who has attended but one course of college instruction, no matter how long since that course may have been taken If he can establish the fact that he did attend one regular collegiate course in an accredited college, you may graduate him after two full courses in addition to that one which he has already taken, provided you do it before 1899 After that time he would be required to take three additional courses The College Association does not recognize any period of time devoted to practice as equivalent to any part of the prescribed course of study, and can not grant advanced standing to any person upon any ground other than previous collegiate work performed in regular and systematic order "

You say three course graduates are eligible to registration in Ohio until July 1, 1899 If this be true, the Ohio State Board lowers its standard beneath that of the College Association No college in good standing can graduate a student in 1899 who has not attended four courses of graded instruction in four separate years, subject alone to the exemptions of Sec 6, Art. III, of the constitution as amended at Philadelphia, May 31, 1897

The Mr Browning of Charleston, W Va , a copy of whose letter accompanies yours of Aug 7, 1897, can not now avail himself of the provisions of Sec. 5, Art III, of the original constitution of the Association of American Medical Colleges, and you can not admit him for graduation on less than three courses of graded instruction in three separate years, prior to 1899, after which date you can not admit him to the degree of Doctor of Medicine until after he shall have attended four courses of graded instruction of not less than six months each, in four separate years, subject to the exemptions herein cited It is the judgment of the Council that the date set for the observance of the four years' requirement in 1899, and subsequent classes, begins Jan 1, 1899

The study of anatomy can not be completed in less than two separate annual courses Final examinations in no part of the curriculum are granted prior to the conclusion of the second annual course

No reputable college can admit the said Browning, or any other student, upon terms different from those specified in the constitution of the Association of American Medical Colleges as heretofore interpreted by the Judicial Council of the said College Association

If the Ohio State Board of Examiners establish a standard below the minimum of the Association of American Medical Colleges, the Council can simply deplore the fact, but it can not permit your college, or any other institution holding membership in the Association of American Medical Colleges, to violate the fundamental principles set forth in the time requirements of Article III of the constitution of the Association of American Medical Colleges

Dudley S Reynolds,
Starling Loving,
Jas H Etheridge,
Victor C Vaughan,
Albert R Baker,
Randolph Winslow,
John B Roberts

On motion of Prof P Richard Taylor of Louisville, the secretary was directed to publish this decision and supply a copy to each member of the association

On Nov 15, 1897, Prof Pickney French, secretary of the Barnes Medical College of St Louis, addressed the following letter to Secretary Holmes

St Louis, Nov 15, 1897

Dr Bayard Holmes, Chicago, Ill.

Dear Doctor I have been instructed by the faculty of Barnes Medical College to make the following inquiries of you

1. Is a medical college that begins its session on January 1, and terminates the same in the following June, strictly speaking, a summer school of medicine, especially when it issues to students, who leave the institution on May 10, certificates of having attended a full course of lectures?
2. If the Barnes Medical College accepted into its regular session a student from such a college, in what way would it be a violation of the rules of the American Association of Medical Colleges?
3. Is there such a rule in force in the Association of American Medical Colleges that requires a lapse of six months' time between the termination of one session, at which a student attended, and the beginning of another which he desires to attend?
4. Is it not a fact that there is a rule only which requires that no two sessions shall be within the same year?

It was the view of our faculty that a summer school of medicine was one beginning its session in the Spring months and terminating its session in the Fall that a school that began its session, 60 or 90 days later in the winter and terminated its session only six or eight weeks later in the Spring months, was nothing more than a regular winter session of college work. This being our view with reference to question 1, it naturally follows that we can see no impropriety in accepting a student from such an institution, as having completed a regular course during the year prior to the time which he enters and terminates his session with us, hence this expresses our views with respect to the second question

The asking of the third question seems to be an absurdity, when we reflect that such a rule would interfere with every college of first-class standing in the United States For instance, the length of session of all high graded schools is from six and one half to nine months The Barnes Medical College began its present session September 13, and will close the same April 12 Rush Medical College has eight months' session, and the medical departments of our State universities, almost invariably nine months' attendance

In regard to question 4, we suggest that the rule requiring that no two sessions shall be in one and the same year is not violated by accepting students from a college that graduates its students from the middle to the 25th of June, while other colleges graduate their students between the 2nd week of April, and the middle of May

Barnes Medical College has always taken pride in enforcing the rules of the American Medical College Association, and it is the purpose of her faculty to abide by the decision of your committees, or the officers of the association—we, therefore, submit this question to you, desiring a speedy reply If you feel like assuming the responsibility of speaking for the association, we will accept your individual views, otherwise we would be pleased to have you submit this communication to such committee as is empowered to pass upon the subject-matter involved and let us have an answer as quickly as is consistent with proper consideration of the subject

I am very truly,
PINCKNEY FRENCH, Secretary

The letter being referred to the chairman of the council, the following answer was returned

LOUISVILLE, KY , Nov 20, 1897

Prof Pinckney French M D , Barnes Medical College

DEAR SIR For answer to your letter of November 15 addressed to Prof Bayard Holmes of Chicago, I have to say that a medical college which begins its session on January 1 and terminates in the following June, can not be held to comply with the rules of the Association of American Colleges, if it issues tickets for a full course of lectures, on the 10th of May The time requirements have been repeatedly held to be fundamental, and it can not be maintained that a student who begins January 1, can possibly have attended one full course by the following 10th of May

Second, if the Barnes Medical College accepted into its regular session a student with no other qualifications than those above stated, such student could not be credited with having attended one full course, and would therefore be obliged to enter the same grade over again

The terms of Sec. 5, Art. III, of the constitution, as it existed prior to June 1, 1897, and of the amended constitution, as it now exists, demand that all candidates for the degree of Doctor of Medicine must have attended three courses of graded instruction of not less than six months each, in three separate years, prior to 1899 After the first of January, 1899, all candidates for the degree of Doctor of Medicine must have attended four courses of graded instruction of at least six months' duration, no two of which shall have been in the same calendar year

The council has several times heretofore decided that "No student can be admitted to a second course of instruction within less than twelve months from the date of the beginning of the first course," and so on through all the succeeding annual courses required of candidates for the degree

It has also been held that the Ohio Medical University could not receive a student for the second course of instruction in September, 1895, who had completed a first course of graded instruction beginning Jan 1, 1895, and ending with the month of June, 1895, notwithstanding the fact that the session of the Ohio Medical University beginning in September, 1895, would not terminate until May, 1896 No member of the Association of American Medical Colleges can be permitted to evade the time requirements with impunity

If this letter is not entirely satisfactory, I will cause your letter to be copied and submitted to the entire council, I am sure, however, that the council could not, without stultifying itself by a reversal of former opinions, dissent from the opinions herein expressed

I am, with great respect, yours truly,
DUDLEY S REYNOLDS,
Chairman of Judicial Council, A A M.C

Similar communications were received from Prof Samuel O L Potter, Secretary of the College of Physicians and Surgeons, of San Francisco, Prof W W Grubbe of the Toledo, Ohio, Medical College, Prof Wm V Morgan of the Central College of Physicians and Surgeons, of Indianapolis, and many individual correspondents, not connected with colleges, all of whom were answered in similar terms Accompanying the application of the Milwaukee Medical College, for membership, I have received a certified copy of resolutions adopted by the faculty of the Milwaukee Medical College, Jan. 29, 1898, as follows

COPY OF RESOLUTIONS ADOPTED BY THE FACULTY OF THE MILWAUKEE MEDICAL COLLEGE AT A REGULAR MEETING HELD JANUARY 29, 1898

(1) *Resolved*, That beginning with April 5, 1898, the course of study of the Milwaukee Medical College shall consist of four years of six months each.

(2) *Resolved*, That in addition to the winter cc [illegible] there shall be a spring course of six weeks, said course [illegible]

(3(*Resolved*, That henceforth the Mil[illegible]lege conform to the standard of requirements [illegible] Association of American Medical Colleges and to those of the Illinois Board of Health

(4) *Resolved*, That the dean of this school be and is hereby instructed to make formal application for admittance to the Association of American Medical Colleges, with the view of having the school admitted at the next meeting of said association

All the above resolutions were unanimously adopted

B A BROWN, M.D , *Secretary*

Upon the basis of these resolutions the application for membership is approved

The application of the Illinois Medical College, made through its president, Prof Randolph N Hall of Chicago, is approved, with the understanding that the institution will observe all of the requirements of our association

On the 15th of April, 1898, Prof P S Conner of Cincinnati charged the St Louis College of Physicians and Surgeons with violation of Article III, Section 7, of the Constitution, specifying that, in March, 1897, the institution conferred the degree of Doctor of Medicine upon Oscar B Ormsby of Murphysboro, Ill , and M A Finley of Mortimer, Kansas, both of whom it was charged, matriculated as first course students at the Illinois Medical College of Chicago, for the season beginning March 15, 1895, in support of which the statement of Prof H H Brown, Secretary of the Illinois Medical College, was filed A correct copy of the charges and specifications, and the evidence supporting them, being furnished the defendant, it was shown that the Finley named in the charges had attended one full course of instruction in the Kansas City Medical College, Kansas City, Mo , one course at the Illinois Medical College in a separate year, and two terms in two separate years in the St Louis College of Physicians and Surgeons, and that the Ormsby mentioned in the specifications, being a pharmacist, and having taken a regular collegiate course of instruction, was entitled to one half term of advancement in his standing The institution having acted in apparent good faith, and doubts of the sufficiency of the evidence to support the charges in the face of the testimony for the defense, the council decided that the charges should be dismissed, and they are declared, not sustained

On the 15th day of April, 1898, Prof P S Conner of Cincinnati, preferred charges and specifications against the Hospital College of Medicine of Louisville, and the Kentucky School of Medicine, Louisville, Ky , charging both of these institutions with graduating at the close of their annual sessions, on the 30th of June, and the 1st of July, 1897, respectively, students who had taken the first course of instruction at the Illinois Medical College, Chicago, during the session of 1895, in violation of Article III, Section 7, of the Constitution. To these charges both institutions plead not guilty To the specifications they plead guilty, and set forth the facts that students attending a full course of instruction in a regular college, in the year 1895, and a second course in the accused institution in the separate year of 1896, and a third course in the separate year of 1897, thus fulfilled all the requirements of Article III, Section 7, of the Constitution, inasmuch as the Illinois College holds its sessions in the spring and summer only, and the two defendants begin their sessions with the month of January and conclude with the month of June, holding no official terms In view of this testimony, and these facts, the charges are not sustained, and have been dismissed In the determination of these matters against the Kentucky School of Medicine and the Hospital College of Medicine, the chairman expressed no opinion, and cast no vote

Before proceeding further with the report, on request of the chairman, that the association should take action upon so much as had already been submitted, it was, on motion, unanimously adopted

Continuing the report, the chairman stated that the decision declaring the Medical College of Ohio to have forfeited its membership, having been published, and the institution thereby sufficiently punished, the chairman desired to submit the following "The council now asks permission to declare that the judgment heretofore rendered against the Medical College of Ohio, declaring its membership forfeited, is now vacated and set aside, and the said Medical College of Ohio is invited to renew its membership in the Association of American Medical Colleges The chairman desires permission to promulgate the decision "

On motion, the [illegible] the Association was granted unanimously

On motion, the [illegible] C [illegible] a [illegible],
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tions of the Association, may, upon furnishing satisfactory evidence to the council of a determination in future to make full compliance with all the rules and regulations of the Association, be admitted to full membership in the interval between this and our next annual meeting

On motion, this request was unanimously granted

Prof Henry O Walker of Detroit, presented the following, which was unanimously adopted

Resolved, That a committee of three be appointed to ascertain the amount of work being done by the several colleges, members of this Association, and offer such amendments to the Constitution as may seem fit to them, for consideration and action at the next annual meeting

The president appointed the following committee to take charge of the resolution Prof Henry O Walker of Detroit, Prof John C Oliver of Cincinnati, and Prof Thomas H Hawkins of Denver

On motion, the secretary was directed to publish the constitution, by-laws, rules of the Judicial Council, transactions of the association, addresses, and papers presented, and all the decisions of the Judicial Council of permanent value, and to furnish six copies to each college holding membership in the association, and one copy to each of the other medical colleges in the United States, homeopathic, eclectic, and to the secretary of each State board of health and to each State board of medical examiners

The Association then proceeded to the election of officers, with the following result President, Prof Henry O Walker of Detroit, first vice president, Prof H Bert Ellis of Los Angeles, second vice president, Prof Samuel C Woody of Louisville, secretary and treasurer, Prof Bayard Holmes of Chicago

The members of the Judicial Council whose terms expire at this meeting are Prof Dudley S Reynolds, Louisville, Prof Victor C Vaughan, Ann Arbor, and Prof John B Roberts, Philadelphia, each to serve three years from this date

The president elect requested to be released from the duties of chairman of the committee, created by resolution, which request was granted, and Prof E Fletcher Ingalls of Chicago, was appointed instead

On motion, the Association adjourned to meet on the last day preceding the next assembling of the AMERICAN MEDICAL ASSOCIATION, at the place chosen by that body

BAYARD HOLMES, Secretary

The Medical Society of the State of New Jersey

One Hundred and Thirty second Anniversary at Asbury Park, June 28, 1898

(Continued from page 244)

In the evening Dr J C APPLEGATE read an essay on

REGRESSION VS PROGRESSION, VIEWING THE GENERAL PRACTITIONER FROM A SCIENTIFIC STANDPOINT

He did not propose to prove regression on the part of the general practitioner as a whole With few exceptions, their progressive strides have not been in keeping with surgery and other special branches The world, it is true, has reached a period in the germ theory that our forefathers never dreamed of, yet the germ theory of most infectious fevers remains still a mystery, and will remain till we have learned the cellular life processes and the ability of cells to resist invasion Many are in the profession who should be at the plow or the anvil, or *vice versa* It is the noblest profession because the humblest of the profession is the general practitioner His responsibilities are great. Is it not true that too often our researches decline at the expiration of our demonstrative course of teaching when it ought to be but the beginning To be successful we must be perpetual students During the last decade many evils have arisen tending to belittle the profession These evils have rapid growth. When the student of today enters upon his field he is confronted by many obstacles Specialists crowd him, some are *bona fide*, others lack the fundamental principles needed An eminent physician recently said that in the future each patient will be visited by the family physician and the specialist. Who will then bear the responsibility? The splitting up of the profession into specialties has resulted in great danger to the unity of medical science A man can not be a successful specialist unless first a successful general practitioner, any more than a man can be a successful contractor until he has labored at and mastered the minor details in connection with the art of building

The general practitioner often encounters patients who have suffered for a period with vertigo, etc., when inquiry of the brain specialist is made, while the cause of the malady exists in some remote part of the system, probably of gastric origin, or neurasthenia when the neurologist is consulted, while the origin is local and ought to be in the hands say of the gynecologist He quoted a case where a lady, aged 45 years, became the victim of epilepsy Growing worse, she was referred to the gynecologist. Nothing abnormal was found The nervous specialist was consulted, no relief But an humble general practitioner, after a careful study of her case, relieved her entirely by antisyphilitic remedies He did not condemn specialists, only the excessive and incompetent specialism producing discontent among the laity and producing trouble for the physician Next, the universal use of proprietary remedies, endorsed by members of the profession, does much to check scientific advancement Even in this age we find learning and science mingling with ignorance and superstition In the larger cities the public charity abuse, unless modified, will soon cause the extinction of the aspiring specialist who is not connected with one of these The motive may be good, but the effect is bad It encourages the wasting of the wages in debauchery They claim they are not to work as the good people have provided for them This evil is unlimited and injurious to the laity as well as the profession The difficulties to be overcome are many, for it is well known that many are deserving but few in comparison with the host of applicants who are in no wise in need When the boards succeed in correcting this evil their work will be commendable The general practitioner is thus deprived of valuable material The method in vogue at the present time, giving greatest semblance to scientific regression, is the result of the relationship between the physician and the pharmacist. When the two were co-operative, things were better While the physician is engaged in compounding his own prescriptions, or dealing out fixed formulas, the apothecary is prescribing over the counter and practicing the art of surgery whenever the opportunity affords If he claims to have been forced into this policy it is in a direction where the counter-pressure is strongest, for the physician has but to look around in almost any home to discover numerous remedies, not proprietary, for various ills, compounded by the authority of one of his own pharmacists The physician has to become his own clerk, assuming responsibilities which belong to the pharmacist. With the beginning practitioner, no better method could be adopted than to handle his own nostrums, as familiarity tends to better his knowledge The established physician can better afford to leave this work to the pharmacist, utilizing his time in seeking for more accurate knowledge of disease and its remedy Can we afford to fill our cases with combinations of tablet triturates, etc, furnished by dealers, with foot notes telling us in which diseases, etc., we shall use them? One of the greatest evils is the indiscriminate use of fixed formulæ He who would be a progressive scientific practitioner must discard such and decide as to what to give his patient after a careful study of the history, etc, of his patient. The science of medicine is a living, not a dead, science With the suppression of these evils, why should we not note a period in our profession paramount with the historical eighteenth century? He who tells us he has something good to reduce temperature without weakening the heart, and can not name the ingredients, had better remain on the farm In the golden age of medicine, the eighteenth century, the profession was not overcrowded and there was much less of that one sided narrow education that obtains today What shall be the future? Will we continue to approve the use of proprietary nostrums? Or shall we take a bold stand in favor of scientific advancement, making the first decade of the twentieth century an epoch in the history of progressive medicine hitherto unsurpassed? In this the general practitioner should play a most active part. He comes in contact with a disease which claims the lives of thousands annually, one eighth of the whole human family, regardless of science, more destructive than Vesuvius and more deadly than war Were he to devote his life to this and establish treatment to successfully combat it, it would be well spent. We can not all be Grosses, Agnews or DaCostas, but he who first is successful in isolating the tubercle bacillus and points out the antidote to effectually neutralize it in the system, will go down in history beside Jenner and his name will be emblazoned on the tablet of fame

Dr P A HARRIS read an essay on

THE DANGERS OF CERTAIN FAULTY IMPRESSIONS REGARDING THE MENOPAUSE.

This usually occurs between the ages of 40 and 50 years It is not attained by all in the same manner Two thirds skip one, two or three periods for a longer or shorter time prior to cessation The rest stop suddenly The average time for this large class to menstruate irregularly is two and a half years To aid in judging as to what is physiologic and what pathologic we must learn the previous habits of the patient When we find the lengthened period and flow markedly out of proportion to her habit, we will be warranted in assuming that a pathologic condition is present. Endometritis, small myomata, the forthcoming cancer, were doubtless the pathologic causes of the floodings observed The profession and the laity still have incorrect impressions as to the menopause Even Tilt regarded as connected with the change many things observable constantly under other circumstances These are merely coincidents I believe insanity and melancholia may be a result Leucorrhea and painful menstruation should not be credited to it These disturbances may often be readily relieved The uterus is a pocket, its cervix a sinus, and when once well inoculated with pyogenic tubercle, etc., it is common for the disease to extend to the fallopian tubes, producing pelvic pain, backache, fever, headache, yet neither of these may be sufficient to cause all so affected to apply for relief, If a patient is nearing the age when the menopause is expected, if she skips a period, has a leucorrhea, etc , she is apt to regard it as the change Usually her physician agrees with her, orders some slight treatment, and she returns later with an increase of the symptoms He then makes a physical examination and may at once discover an unmistakable carcinoma The question of operation occurs, but the case has been made worse by the delay or neglect, thus, constantly, carelessness causes injury and perhaps loss to the physician Often, on the other hand, the woman is led astray by her friends, who view all such matters in the light of the change and believe that all will soon come right Here the delay is the result of the common belief that so many things are due to the change After carcinoma, the most common trouble is the development of uterine fibroid or myomata Even small fibroids are often dangerous to neglect, producing emaciation and an appearance as of carcinoma The expectant treatment must here be abandoned as a cure is almost sure to follow the proper treatment There is little in the change of life to affect the woman so as to produce serious pathologic conditions Such may coexist, but are not in relation as cause and effect In all cases we must make particular inquiry and physical examination, never let the nearness of the menopause influence the opinion to the neglect of every precaution It is important to detect cancer early Remove such and the mortality will be largely reduced While late operation often results in good, yet we have no right to expect it. We should not depend solely upon the fingers, eyes, etc , but use the microscope Let us then remember that the menopause of itself has little if any effect in either precipitating or arresting the more serious diseases of the pelvic organs, that many of the pathologic conditions are inaugurated and maintained with little regard to that special period in the life of females when the phenomena of ovulation and menstruation are preparing for their final adieu

Dr S A Twinch read a paper on

THE EARLY DIAGNOSIS AND TREATMENT OF POTT'S DISEASE.

This paper was well illustrated by pictures on the screen and gave much satisfaction to the society Spondilitis is a chronic tubercular osteitis which may begin in any part of the spinal column The symptoms which aid in the diagnosis during the period before deformity appears, he mentioned, as it is then arrest of the trouble may be hoped for There is a lowering of the vital functions as a premonitory stage The cervical form shows a rigidity of the muscles around the neck, with difficulty of breathing and occipital neuralgia

The head is in various positions, generally to one side, the face looking down The positions assumed are maintained by the rigid cervical muscles The body turns with the head Dysphagia is present, caused perhaps by abscess of the vertebra Such cases are more comfortable when standing or sitting than lying down Cervical caries is often confounded with torticollis In caries there is often spasmodic contraction while in torticollis only the one muscle is affected In dorsal caries an early symptom is rigid back muscles and a prominence of the abdomen This is nature's method of splinting the spine The natural flexibility of the healthy spine and the reverse of the diseases is significant Stooping shows this peculiar gait is an early symptom, he walks with care Lateral deviation is also a well known symptom on which great reliance can be placed This may be slight and easily overlooked Elevated temperature is constant The afternoon rise is from 1 to 4 degrees Paroxysmal pain is frequent at the seat of the disease or in the chest or abdomen aggravated by jar, etc At night this simulates his disease, by the night cries, or it may be mistaken for stomach ache Persistent abdominal pain ought to receive attention although it is not diagnostic of Pott's disease Absence of pain can not be assumed as absence of Pott's disease Tiring easily, leaning on chairs or tables means danger ahead Dorsal must be differentiated from rachitic and rotary lateral curvature of the spine Here we have rachitic symptoms, enlarged epiphyses, open fontanels, decayed teeth, etc. Again there is no spasm of the muscles, little or no pain and no elevation of temperature Lumbar Pott's disease is more difficult to detect early The occurrence of deformity may be preceded by flattening of the lumbar curve The attitude is that of lordosis, the gait military and careful Here curvature is most marked We may be deceived by the ease with which the child bends the spine to stoop In Pott's disease the irritation of the lumbar nerves causes psoas contraction, drawing up the thigh. Early, it is difficult to differentiate the two troubles, generally, when the hip symptoms are due to Pott's and the joint symptoms are caused by psoas irritability, the motion in the hip is the loss of extension while abduction and internal rotation are free and not affected The limitation of motion in one direction is usually sufficient to establish the presence of Pott's disease Complications are abscesses, the location varying In cervical it usually opens into the mouth or neck, in dorsal or lumbar in the back or may burrow to open below Poupart's ligament, etc Watch carefully that the spine is properly supported, remove all weight from the vertebræ In treatment we must not forget it is tubercular and calls for constitutional treatment The local affection must be treated by rest, prevent friction, relieve superincumbent weight We have the plaster jacket and the spinal steel brace Both have their uses The first has the advantage of cheapness and can be moulded to fit the body It is also porous and should be renewed every three months The jacket is especially suitable for mid dorsal lower dorsal and lumbar Pott's disease When above the lower dorsal region a jury mast should be used to support the head and shoulders Accurate adjustment is needed It must not have any buckles and straps at the will of the patient If there is to be any fastening, let it be a single row of hooks as on a laced shoe, and care must be taken to bring the edges together The advantage of the plaster jacket is, once applied it can not be tampered with We usually keep a child in a closed jacket for three years, then a lace or open jacket another year, taking it off at nights the last six months For upper dorsal and cervical the jacket is not suitable, not supporting the parts above the disease It can here only serve as a support for the jury mast. A good apparatus here is Sayer's body brace combined with Schaffer's head piece It immobilizes the weight and supports it, thus being superior to a jury mast The foundation of all jackets is the hip bones, hence it is useless to apply anything till this part of the anatomy is developed to give the support This is usually by the age of three years The only satisfactory way of treating very young children is by recumbency and the wire cuirass A board can be cut to the shape of the child, well padded to be comfortable to lie on If traction is required a mast can be applied to the upper end The child is then bandaged to the board, being partially removed morning and evening so that the back may be rubbed with alcohol and treated with powder to prevent irritation A proper and concise record should be kept to see that the deformity does not increase The little knuckle at the back may increase so slowly that it is not noticed A photograph is useful here, or better a tracing with a flexible piece of zinc If we find increase, no matter how slight, look for the cause There may be fault in the apparatus, not giving sufficient support to the spine, or the child may be doing too much running around, here recumbency is indicated for a few weeks For bed patients it is advisable to use apparatus to ensure the child being kept in a recumbent posture The Bradford frame is extremely simple It is made of four pieces of gas pipe put together with elbows Across the frame are stretched two pieces of canvas between which a space is left opposite the buttock This frame can be laid on the bed and the child strapped to it It can be carried all over the house Abscess depends on location Post-pharyngeal must be opened as soon as possible because of the tendency to embarass respiration, elsewhere, better let it alone unless there is a great deal of systemic disturbance or when increasing rapidly If opening is imperative, after this dress antiseptically and keep clean Iodoform and glycerin injection are of no use as not reaching the seat of the disease The formation of an abscess, however, in a case which has been under treatment for some time, suggests that the spine is not being fully and properly supported The case may need a jury mast, or possibly ambulatory treatment for a time is contra indicated Here keeping in bed, wearing the apparatus, will be of inestimable service

After some routine business the officers for the ensuing year were elected President, C R P Fisher, Bound Brook, first vice president, Luther M Halsey, Williamstown, second vice president, Wm Pierson, Orange, treasurer, A Mercer, Newark, secretary, W J Chandler, South Orange, corresponding secretary, E L B Godfrey, Camden Next place of meeting Deal Beach, last of June, 1899

PRACTICAL NOTES

Abdominal Massage is being highly recommended for its diuretic effect in heart disease —*Bull de l' Acad de Méd* , May 10

Urethran and Quinin hydrochlorate in the proportion of 1 to 2, form an effective combination for intravenous and subcutaneous injection —*Gaz degli Osp e delle Clin*

The Almost Invisible Cultures of the Influenza Bacillus become large and prominent if inoculated with the staphylococcus aureus This fact, recently announced by Meunier, may prove important in the study of micro organisms —*Progrès Méd* , June 18

Tachycardia in Pulmonary Tuberculosis is always an indication of a rapid course and fatal termination of the disease, according to Sirot It is symptomatic of an endocarditis from specially virulent bacilli or of a myocarditis from miliary tuberculization —*Semaine Méd* , June 8

Dry Suture of Intra abdominal Hydatic Cysts —The cyst is evacuated and wiped dry with sterilized tarlatan, then sutured with a continuous suture, followed by the suture of the abdominal wound The cyst does not fill again, and obliteration is much more rapid and complete than by the usual methods —Bobrov of Moscow *Semaine Méd* , June 7

Intranasal Synechia is very apt to follow galvanocauterization, but it can be entirely prevented by cauterizing with a few crystals of chromic acid melted on the tip of the probe The scars thus produced act as insulators, and the process is but slightly painful, much to be preferred to the metal plate and celluloid plates recommended for the purpose —*Jour des Soc Med de Lille*, June 18

Combined Electric Treatment of Sciatica —Renault has cured 80 per cent of all his cases by combining the electric bath from a static machine with sparks induced along the spine and course of the sciatic, and faradization of the atrophied muscles in turn until ten to twelve contractions have been produced The seances are repeated every day or alternate days Some are cured in one to five, others require twenty to thirty —*Semaine Méd* , June 1

Cimicifuga Racemosa for Buzzing in the Ear —Robin and Mendel have found thirty drops a day of the extract of cimifuga racemosa extremely effective in arresting the noises in the ears caused by direct or reflex stimulation of the auditory nerve, with or without accompanying lesions, ear plugs, etc This drug has already proved a good antispasmodic for parturient cases, with marked diaphoretic, narcotic and antipuritus properties —*Munich Med Woch* , May 31

Inflammatory Processes in Meckel's Diverticulum produced symptoms resembling appendicitis in two cases recently observed by W Kramer In one case the trouble was not located until a second operation, when the diverticulum was found occluded by a fruit seed In the other it had encircled and crooked a loop of the intestines, causing symptoms of ileus Both were resected after double ligature One other similar case has been reported by Picqué —*Munich Med Woch* , May 31.

Methylene Blue in Migraine and Nervous Headache has been found very effective in several cases, including himself, by E Thomson of Dorpat It prevented the appearance of the severe headache that had previously always accompanied the arrival of the menses in some of the patients He noticed the increased desire to urinate, and the green tinge of the urine that accompanies its use It is given with nutmeg aa 0 1, in a gelatin capsule One dose may prove sufficient.—*St Petersburg Med Woch* , June 11 Migrol, a combination of equal parts brenzcatachuin monoacetic acid, caffein and guaicatin, has also been found very effectual in migraine Dose 0 5, one to three times a day

Acute Phosphorus and Morphin Poisoning —Potassium permanganate has been found effective in neutralizing these intoxications, as it transforms the phosphorus and morphin into harmless oxidated combinations, but, as the potassium itself is poisonous to a certain extent, Schreiber has been testing sodium permaganate, which he finds equally effective and non irritating He advises a 0 2 per cent solution to rinse out the stomach, afterward introducing half a liter and leaving it —*Cbl f Inn Med* , No 23

Movement Test for Lumbago and Ischias —L Minor calls attention in the *Deutsche Med Woch* , Nos 23-24, eleven cuts, to the characteristic manner in which patients raise themselves from a seated position on the ground With lumbago the motions are the same as in pseudo hypertrophy of the muscles, the patient bends forward and raises himself by pressing down on his legs, thus climbing to an erect position In ischias the center of gravity is thrown backward, and the patient supports and raises himself on one hand placed behind him, balancing the other in the air

Iodin for Infective Gastro enteritis —Grosh administers a teaspoon of the following every one or two hours Tinct iodin, 15 to 18 drops, aq dest , 150 grams, simple syrup, 20 grams The vomiting, pain, diarrhea and fetid odor of the stools disappear with this treatment, which is also effective in icterus, gastric grippe and incipient appendicitis He has also found iodin an effective disinfectant in typhoid fever, giving six drops tincture in a little sweetened water three or four times a day —*Semaine Méd* , June 22.

Milk for Nutritive Enemas —Some recent tests at v Leube's clinic show that milk is the best substance for this purpose, as a liter introduced into the colon is readily absorbed without any irritation or pain, or the appearance of albumin or sugar in the urine No digestion occurs in the colon The carbohydrates are absorbed best, the albuminoids next and the fats least. The coagulation produced by the bacillus coli interferes with the absorption This is avoided by thoroughly rinsing out the bowels before administering the milk and by the addition of 1 to 1 5 grams natrium carb to the liter —*N Y Med Monatsschrift*, June

Incompatibilities of Antipyrin —Tannin precipitates antipyrin in the form of a tannate Calomel combines with antipyrin to form a very poisonous organic mercurial combination Antipyrin and carbolic acid also form a combination which forbids their being prescribed together, as is also the case with antipyrin and substances which contain nitric acid, such as amyl or ethyl nitrite If antipyrin and sodium salicylate are mixed in a powdered form they combine into a gelatinous mass, but they do not affect each other in solutions —*Vienna Klin Rundschau*, May 29

Electric Treatment of Psychoses proceeding from parasthesia of the dura mater, has been found effectual in four cases, by C Mondino of Palermo These psychoses commence with tingling, sense of pressure and burning in the cranial vault, followed sooner or later with impairment of the mental faculties, pronounced hypochondria, and various fixed ideas persecution, an insect crawling under the skin, etc All these symptoms are connected with the paresthesia of the dura mater, which can be cured with galvanization, when they at once cease A large electrode is applied over the affected region on the skull, connected with the positive pole with a current of 10 to 15 milliampères Six to fifteen seances accomplished the cure —*Semaine Méd* , June 1

Excision of the Fibula for Sarcoma—Lloyd, in *Annals of Surgery* for June, reports a case which he believes to be the first example of excision of the fibula for malignant disease, as in malignancy amputation is usually resorted to In this case there has been no sign of recurrence, and while there is considerable ankylosis at the ankle joint, the patient walks with very little limp and claims to be perfectly comfortable

Treatment of Paralysis Agitans, based on the observation that the rigidity and trembling affect the flexors only, while the extensors strive to correct this tendency, has resulted most successfully in the experience of R. Veerhogen (*Jour Med de Bruxelles*, 1897, No 38) He aims to strengthen the extensors and tranquillize the flexors, the former by faradization as powerful as the patient can bear, followed by light massage, the latter by administering atropinum sulfuricum, 0 25 mg, combined with 0 2 gram secale cornutum, and connecting the positive pole of a galvanic current His patients have resumed their occupations and consider themselves cured —*Deutsche Med Woch*, June 16

The Deodorizing Properties of Formalin have not been emphasized to the extent they deserve A tablespoon of formalin in a liter of water will be found the most efficient of all deodorants, non toxic and absolutely non irritant. It is especially recommended for offensive discharges, for the anal and genital region, for excessive perspiration of the feet and armholes, to use after dissections, to wash off furniture, commodes, lower part of walls, vessels, etc The upper part of the walls may be deodorized by evaporating the "formalin water" in a pan over a lamp The vapors do not affect the inmates of the room. —*Munich Med Woch*, May 31

Value of the Salts of Ammonium—F Mohrhoff announces that these salts, and especially the ammonium silicon fluorid, have a most powerful antiseptic and tonic effect when inhaled, "an ideal medium for the treatment of all diseases caused by abnormal metabolism, as diabetes, etc, as well as affections of the air passages" As a tonic the effect is more direct and immediate than that of iron He has invented an improved inhaler which renders its application more convenient, but does not describe its features in his communication to the *Deutsche Med Woch* of June 9, merely mentioning the maker

Cocain Intoxication—Weigand has collected 250 cases of acute cocain intoxication, twenty one fatal It is impossible to establish a maximum fatal dose for man, as the tolerance varies widely The most dangerous application seems to be large amounts applied to the mucous membrane Seven deaths followed its use internally, two in the rectum (*Cbl f Chir*, May 28) Bozza reports, in an Italian journal, that the hypodermic injection of physiologic salt solution immediately after the ingestion of nearly twice the fatal dose of cocain will preserve dogs from intoxication He therefore recommends hypodermoclysis for cocain intoxication

Urethral Pencils must be made of a substance that will not melt and run out. A combination of two parts cocoa butter, one part lanolin is recommended in the *Bulletin of the Bordeaux Soc de Pharmacie* for May This is melted and set aside until needed, when it is remelted and the medicament blended with it A glass tube is then inserted in the fluid mass and it is drawn up into the tube by suction with the mouth. The other tubes are filled in the same way, and when the fluid is hardened, but not really cold, the contents of the tube are pushed out with an iron rod, 3 mm. in diameter, which fits smoothly inside the tube The pencil is received on a marble or glass slab They can be delivered at once, but are not perfectly solid until the next day

The Success of Salophen in Curing Pruritis is proclaimed by several writers in the *Dermet Ztschft* for May Salophen is a combination of salicylic acid with acetylparamido phenol, and passes through the stomach unchanged, to be slowly split up by the alkaline secretions of the intestines It cured a number of chronic rebellious cases accompanying moist eczema, diabetes, urticaria and psoriasis, and checked any recurrence of the pruritus The dose is 3 to 6 grams a day Drews ascribes the cure to it in a couple of cases of gonorrheal rheumatism out of five treated According to Drasche, it produces copious perspiration and the skin is found scattered with minute crystals of the same form as salophen crystals All state that it does not disturb the digestion

Cheese in Nervous Dyspepsia—The dyspepsia accompanying herpetism or neuro-arthritism is very deceptive in its manifestations, patients complain of heart, lungs, brain affections, vertigo, paralysis, but the true trouble is indicated by the triad, cold extremities, insomnia during the middle of the night and fatigue on waking in the morning, with, occasionally, pain in the sternal or intercostal regions, palpitations, drowsiness in the evening, etc Lancereaux forbids to such patients everything fried, acid or uncooked, wine, chocolate, colored sauces, fruit and bread, except the crust or toast. But he recommends the cheese of the Brie, Camembert and Roquefort varieties, a little very fresh butter, eggs, broiled or roast meats, etc., for breakfast a crust of bread, soft egg and Brie cheese Water is the principal beverage, with a little tea, coffee or mild beer, or ordinary beer diluted with Vals water or very weak brandy water—*Union Médicale*, May

Treatment of Prostatic Retention—Rochet bases his treatment on repeated catheterization, provided it can be done with ease and is not required too frequently, in which case a permanent catheter should be inserted If catheterization is too difficult and urine is retained, with fever, pain, hemorrhage, etc, the bladder should be punctured again and again, or temporary drainage of the bladder arranged, after which the congested condition may pass away and the normal flow of the urine be restored or catheterization become easy again Chronic cases may require perineal drainage, dilatation and perineal prostatectomy For extreme cases with infective suppurating cystitis, suprapubic cystostomy is the only means of relief The importance of immediate investigation by both abdomen and rectum in case of any disturbance in the functions of the bladder in elderly men has recently been emphasized by Englisch, who adds in regard to catheterization that the "longer the retention has lasted, the more slowly should the bladder be emptied"—*Cbl f Chir*, June 11

Treatment of Lupus with the Roentgen Ray and Concentrated Sunlight has passed beyond the experimental stage H Kümmel of Hamburg, announced at the German Congress of Surgery that he had positively cured sixteen patients to date with exposure to the Roentgen ray for fifteen to twenty minutes, twice a day for a period of four weeks to several months The sound skin is protected by a light sheet of lead or stanniol, cut to expose only the lupus patch, with the tube from 20 to 40 cm distant All irritation of the skin is most carefully avoided, and exposure individualized to prevent the slightest dermatitis The lupus patches heal over with a smooth surface scarcely to be distinguished from normal skin Similarly favorable results have been secured by Finsen of Copenhagen, with contracted sunlight or electric light, excluding the heat rays As blood prevents the passage of the rays he expels it from the point to be treated by a convex, transparent glass saucer, strapped on tightly He reports a large number cured from one to two years, but his process requires months of treatment, as only a small point can be treated at a time The combination of this method with the Roentgen ray treatment promises remarkable results The latest tests fail to confirm the bactericidal action of the Roentgen ray Its effect on lupus is evidently due to some still undetermined influence on the lupus tissue, possibly electro chemic or trophoneurotic —*Cbl f Chir*, July 2

SELECTIONS

Medical Education in Mexico —In 1578, a chair of medicine was initiated in the University of Mexico—that institution being then twenty five years old—and was the first of the kind to be established in the New World It was called the *prima* or morning class, and the professor was expected to cover the whole field of the science, as it then was taught, and it was said that he managed to do so in the course of four years The student, as the custom then was, was required to serve a pupil age under some practitioner for a longer or shorter period Candidates had previously to study Latin and to go through the course of arts, and astrology or mathematics, and to obtain the degree of Bachelor of Arts In 1599 a second chair of medicine was founded, which was called *vesperas*, or evening class In 1661 chairs of methodus medendi and of anatomy and surgery were established, and later a class of dissection and operative surgery was added At the end of the curriculum the student obtained the degree of Bachelor of Medicine, subsequently, after a fresh examination, that of licentiate, and finally, after an interval, that of doctor In 1768 a Royal College of Surgeons was established on the model of similar colleges then existing in Cadiz and Barcelona In this college practitioners of a lower grade were trained, they were called "Romancist surgeons," to distinguish them from the "Latin surgeons" who studied in the University At this College, also, phlebotomists, dentists, bone setters, midwives, etc, picked up such scraps of knowledge as were required for the exercise of their several functions After a time an ordinance was made that no one should be allowed to matriculate in this school who did not know Latin In 1830 a further step was taken for the improvement of the professional education of the surgeons in the shape of an enactment that no one should be admitted to the school of surgery who had not previously obtained the degree of Bachelor of Philosophy In 1831 the two branches of the profession were finally amalgamated, all candidates were required to submit to examination in medicine and surgery, and the faculty conferred a diploma in both, instead of the various diplomas of physician, "Latin surgeon," and "Romancist surgeon," which had previously been given The numerous political changes which swept over Mexico in the years following 1833 affected the medical school, which was several times closed, and more than once in danger of destruction Largely owing to the public spirit of its professors, however, it managed to survive, and under the enlightened administration of General Diaz, it has now developed into a highly efficient teaching institution Before 1833 it had 11 professorships, from that date to 1877 only 5 were added From 1877 to the present date 10 new chairs have been established, without counting a large class of clinical teachers, assistants and prosectors

Cesarean Section —Reynolds (*Am Jour of Obstet*, June) considers Cesarean section justified in all cases where a mechanical obstacle renders delivery, in an otherwise healthy woman, more than ordinarily difficult and dangerous His experience covers twelve years' service in a clinic which delivers 2500 women every year He believes that symphyseotomy should be restricted to the class of cases from which he would exclude performance of Cesarean section, *i e*, cases of moderately contracted pelves in women not previously healthy, or in women exhausted by long labor His conclusions are 1 That in women who are the subjects of visceral disease or other previous ill health, and in women who are exhausted by long labor the maternal mortality of the Cesarean section is too great to allow of its performance in the interest of the child alone 2. That in primiparæ with moderate contraction the decision whether or not the Cesarean section should be performed as an alternative operation at the beginning of labor in preference to an attempt at an intrapelvic delivery, is a decision which is intrinsically so difficult that it should be attempted by none but the most experienced obstetricians 3 That in most cases of moderate contraction in primiparæ it is best to wait until the progress of labor teaches us which is to be the safer operation in the given case 4 That when any healthy woman has lost one child by a difficult operative labor in the hands of an expert she should in the next labor be prepared for Cesarean section and delivered by it, unless the course of labor shows that from some changed condition, e g, a small child or a more favorable position, a forceps delivery is likely to be easy 5 That when any case occurs in the practice of the comparatively few men who are really experienced in both obstetric and abdominal surgery, in which an attempted forceps operation proves to be exceptionally difficult and version promises no better results, the forceps operation should be suspended, and if the fetal heart is undisturbed, should be abandoned in favor of the Cesarean delivery 6 That in very small pelves, e g, those under three and one fourth inches in the conjugate, the Cesarean section in favorable circumstances is the operation of preference

The Treatment of Carbolic Acid Poisoning with Vinegar —The following case is related by Dr Steavenson in the *Indian Medical Record* The patient was a girl 18 years old, who said she was subject to "fits" On Aug 3, 1896, she was taken with one, and when the physician saw her she was in a semi conscious condition and frothing at the mouth She had vomited slightly, and the vomited matter had a sour smell, but no carbolic acid odor was observed She regained consciousness, and a bromid draught was administered She gradually became worse and another physician was called to see her He diagnosticated the case as one of carbolic acid poisoning and as he could not rouse the patient nor get her to swallow anything he ordered her to be removed to the hospital On admission, she was still wholly unconscious, cyanosed and nearly pulseless The lips and tongue were discolored and the breath had the odor of carbolic acid The physician gave her a hypodermic injection of strychnin (one eightieth of a grain) He then passed a soft stomach tube, washed the stomach out with equal parts of vinegar and water, and followed this with about six pints of warm water He then gave her five ounces of milk and an ounce of brandy She was then put into bed and kept warm She gradually regained consciousness, and a few hours afterwards was able to speak She was fed on Benger's food, milk and soda water for the next three days She did not vomit or complain of any pain Carboluria was present for two days The author states that he was led to use vinegar in this case by Professor Carleton's suggestion in the *Practitioner* of August, 1896 He can not state definitely how much carbolic acid was taken The long period of unconsciousness, the rapid recovery, and the absence of discomforting after effects speak well, he thinks, for the vinegar, and he is of the opinion that it should be given a fair trial, especially as it is a remedy easily obtained

Primary Tuberculosis of the Spleen —Quenu laparotomized a woman of 21 years, in April, 1897, for a painful tumor of the spleen She had previously been affected with cervical adenopathy The lower portion of the organ was found grayish white and fluctuating, the seat of a tumor the size of a man's head, but adherences rendered extirpation impossible, although he was able to bring it into the abdominal wound and suture it to the parietal peritoneum An incision only brought a few drops of fluid A couple of pockets were excavated with the fingers, removing a fibrinous substance, and drains inserted A fetid fluid was discharged through them and, in a few days, the wound filled up with a greenish, granulating mass, which was removed every day with the scissors or thermocautery, in fragments This elimination of the mortified substance continued into August, but the wound definitely healed over by September The Koch bacillus was noted in the tissues removed In May a tumor of tuberculous origin also appeared in the supraclavicular region, which was promptly extirpated —*Rev de Gyn et de Chir Abd*, March and April, 1898

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SATURDAY, AUGUST 6, 1898

UPON THE EXISTENCE OF A MINUTE MICRO ORGANISM IN CASES OF CIRRHOSIS OF THE LIVER.

While working with the so-called Pictou Cattle Disease, in 1894-5, Professor ADAMI of Montreal, obtained from the livers and abdominal lymph glands a characteristic micro-organism The striking feature of this disease is an extensive cirrhosis of the liver, accompanied by swelling of the periportal and retroperitoneal lymph glands, with some ascites, and with follicular ulceration of the fourth stomach The recognizable symptoms, the most marked of which is falling off of the milk, which becomes bitter when heated, occur shortly before death Hence the cirrhosis must have been advancing for some time without producing any symptoms

The microbes referred to are very difficult to stain, that is to say, they stain easily but lose their stain with extreme facility They are also extremely minute, being barely recognizable with a fifteenth immersion lens

The presence of these micro-organisms in the cirrhosis of the liver of Pictou Cattle Disease led ADAMI[1] to examine cirrhotic human livers for the purpose of observing whether or not the same or similar micro-organisms occur there It will be recalled that HANOT and French pathologists in general have for some time held that the large, smooth cirrhotic liver with jaundice (hypertrophic cirrhosis) is of infectious origin No one, however, has ventured to state that the more common, so-called atrophic cirrhosis, is due to microbes, the general opinion being that alcohol and other irritants, by causing a chronic gastro-enteritis, lead to the absorption of toxic bodies from the food, which toxic substances induce, as they are taken up by the portal blood, a proliferation of the portal connective tissue

Professor ADAMI's study of human atrophic cirrhosis was met by many difficulties, the chief one being the difficulty of securing a satisfactory and positive stain In favorable instances, however, he was able to make out that certain fine granules in the liver sections resolved themselves into large numbers of minute micro-organisms of the character observed in Pictou Cattle Disease, but smaller In the main they were present as diplococci, with slight halos around them Many of the forms resembled small gonococci, but variations in size of the micro-organism occurred Some of them resembled short bacilli

ADAMI has not yet been able to elaborate a perfect stain The most satisfactory procedure so far consists in placing the sections for a minute or two in a weak solution of acetic acid, then to wash out the acid, and after passing the sections through absolute alcohol, to place them in a solution of methylene blue and anilin oil Here they are left for half an hour They are then transferred for fifteen seconds into a mixture of two parts anilin oil and two parts xylol, and then into xylol This method gives fair results for immediate study but does not yield permanent specimens By this method the bacteria are seen plainly in the newly-formed connective tissue, and also, without doubt, in the liver cells Some of them do not stain perfectly, remaining brownish, and these are probably dead

At the time of making this report ADAMI had come across this micro-organism in every case of advanced hob-nailed liver examined (five cases) and he would go so far as to state, that in a number of cases, at least, of atrophic cirrhosis, there is present a minute micro organism resembling closely the one in the infective cirrhosis of cattle

Since making his first report ADAMI has had occasion to study material from Rush Medical College, Chicago, and the Johns Hopkins Hospital of Baltimore, and in all of the Chicago cases, as well as in ten well-marked examples from Baltimore, he was able to recognize the appearances above described

A fuller description of these most interesting observations will be presented at the meeting of the British Medical Association at Edinburgh, by Dr Osler

CONCERNING THE SO CALLED APOPLEXY OF THE UTERUS

The condition described by CRUVEILHIER, and later by ROKITANSKY, KLOB and DITTRICH, under the term of apoplexy of the uterus, has not been given any consideration in the ordinary gynecologic text-books

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[1] Montreal Medical Journal, July, 1898

C von Kahlden,[1] of Freiburg, has recently described several cases which he has observed anatomically and subjected to a thorough examination

The anatomic condition is, in its principal features, the same in all cases While the size of the organ may vary, as well as the size of its cavities, there is found everywhere, in the mucous membrane of the uterus more or less pronounced hemorrhagic infiltration, which in the least marked instances remains limited to the mucous membrane, while in the more advanced cases it extends deeply into the muscular coat The cervical mucous membrane is always free from extravasations

The most striking as well as most characteristic features in these cases are the changes in the vessels in the outer half of the wall of the uterus These changes are regarded by von Kahlden as arterio sclerotic in nature The arteries present segmentary semilunar, and even annular, calcification of the media, with advanced narrowing of the lumen, the intima being sometimes ten times as thick as normal, the muscle granular, more rarely the seat of a hyaline degeneration This thickening in the intima very often reminds one of the endarteritis of syphilis In advanced cases the calcification may have involved the intima The veins in the vicinity of the diseased arteries are greatly dilated and filled with blood the muscle of the uterus being sometimes necrotic and sometimes the seat of atrophy and connective tissue substitution These various changes are finely illustrated by means of lithographs of colored drawings Von Kahlden does not regard the hemorrhages into the mucous membrane as due to rupture pure and simple, because the diseased vessels are so far away from the inner lining He is inclined to the opinion that the hemorrhage results from retrograde changes in the blood, which view, although it seems rather unreasonable on account of the numerous anastomoses of the uterine arteries, yet appears to be well substantiated by the considerations presented in the article

The etiology is entirely obscure Among the conditions that might be brought into question, although any direct connection with any one of them has not yet been established, may be mentioned pregnancy, involution, inflammatory puerperal processes, menstrual congestions, and old inflammations Under all conditions the cause has to be sought in local changes, because the arterio sclerotic process described runs its course independent of arterio sclerosis elsewhere in the body

The diagnosis is not easy The hemorrhages constitute a prominent feature With a curette it would often be impossible to bring away any of the typically diseased vessels, and even should this be the case the condition may be readily confounded with carcinoma and inflammatory processes The hemorrhages and the old age of the patient are facts that at once prepossess the physician in favor of a carcinomatous process, and the extravasated masses of blood very often press together the glandular tubules in such a way that they resemble not a little the glandular masses of carcinoma It is the fact that this process may be confounded with carcinoma that has led us to call attention to it

SALINE INFUSIONS

It is surprising that the use of saline infusion, a method so incomparably superior to all others in the treatment of hemorrhage and shock, should meet with such restricted use among the general practicing physicians There are perhaps few hospitals that are not provided with the apparatus and the sterile salt solution necessary for infusion at ten minutes' notice, yet the general practitioner seems almost never to class it among his methods of combating hemorrhage, shock and septicemia He feels his duty done when he has filled the patient with strychnin, whiskey, digitalis, nitroglycerin or coffee The effects of intravenous and hypodermic infusions are so immediate and so absolutely life-saving in many instances that nobody who has ever seen its use can doubt for a moment its superiority as a surgical method The greater the pity, then, that the general practitioner of the country and city districts, nay many a surgeon in hospital practice, should fail to place this among his everyday practices in the treatment of his cases It is needless for the country practitioner to say that he rarely has the opportunity for its use, because he certainly has cases of typhoid with hemorrhage, post-partum hemorrhage, septic cases, and many cases of severe injury to treat in the course of a twelve-months He need not cast aside the hypodermic syringe, the stimulants and all other means of combating shock, but in omitting the use of the infusion of salt solution he is omitting the most nearly life-saving agent that he ever can have at his command To say that he has not the surgical skill is absurd Hypodermoclysis, or the injection of salt solution into the loose subcutaneous tissues, is perfectly easy and simple in any private residence The physician needs a fair sized aspirating needle (or his hypodermic needle will do) and three feet of good rubber tubing These should always be in his bag and when occasion arises *it is perfectly simple to call for a clean* half gallon stew pan, fill this with clear water and make a normal salt solution by adding one drachm of common table salt to the pint of water The tube and needle are now placed in this salt solution and both solution and tubing sterilized by boiling for a few minutes The salt solution can be quickly cooled to a temperature of 105 to 110 degrees F, by placing the vessel in cold water, and the syphon is established by means of the rubber tubing which has been connected to the needle When the fluid is flowing and all air is expelled from the tube, the needle is thrust into the subcutaneous tissues of the chest, axilla or abdomen, and from a pint to a quart of the salt solution allowed to slowly run in This puffs up the skin and forms a tumor, but the solution will absorb rapidly and an abscess will almost never form The patient revives as by magic, unless his vital processes are at such a low ebb that the solution cannot be absorbed, when intravenous injection will be indicated

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[1] Ueber die Sogenannte Apoplexia uteri Zeigler's Beiträge xxiii 1, 1898

The intravenous injection should not be more formidable to the practitioner Anybody ought to be able to find a vein in the arm or the leg, and there is practically no danger in looking for it Having found the vein, a small canula of metal or glass should take the place of the needle used in the method previously described, and this inserted into the proximal end of a vein which has been one-third or one half divided by a clip of the scissors The canula is held in place by a ligature previously thrown around the vein and the fluid may flow in rapidly, with, of course, much more rapid effect than could be expected in hypodermoclysis It is folly to think of either one of these methods as a difficult process, and furthermore, no matter how difficult it may be, it is the duty of every practitioner to understand its use Should a new specific drug for a cold or pneumonia be placed on the market, every practitioner in the country would prescribe it and, furthermore, his patients would demand it The use of saline infusions is as specific in its field of usefulness as any drug that we possess

Salt solution is the one preferred by almost all surgeons, and the addition of the chlorid of calcium and potassium, as in RINGER's fluid, are found to be unnecessary Pure water has been used without damage in emergencies The percentage of salt need not be accurate, and is obtained by adding ℥i of common salt to Oi of water One to three quarts may be given, and it is well to remember that it is hard to give too much since experiment has shown that 40 to 80 c c per minute are not toxic The temperature in the supply reservoir should be 105 to 107 degrees, in order that the temperature of the fluid may be approximately 100 degrees F, when it enters the vein or subcutaneous tissue The injection may be repeated a number of times should the patient's condition fail to improve or become worse after a temporary improvement

There are many cases of hemorrhage where the patient is so completely exsanguinated that it seems the only possible benefit can come from the transfer of oxygen-carrying blood from another man or animal to our patient Yet, it must always be remembered that in the majority of cases it is impossible for a patient to lose enough red blood-corpuscles to impair the respiratory function He invariably faints first, because the circulating blood is insufficient to supply the heart, the respiratory centers and the brain The real need is to furnish enough fluid to suspend the remaining red blood cells for circulation through the system and restore a normal amount of circulating fluid for the heart and arteries to act upon As has been said before, a 6 per cent salt solution answers every purpose of complex solutions that attempt to reproduce the chemic composition of normal blood serum, it is always at hand and easily made, furthermore, it can be boiled for sterilization without changing its composition The transfusion of blood is entirely abandoned as a dangerous procedure and as one that is inferior to saline infusion even when it works without accident As previously stated, there are enough red blood cells left to perform the function of respiration

In conditions of shock without great loss of blood, the entire nervous mechanism of organic life, according to GROENINGEN, is raised to a maximum stimulation, and the inhibitory centers are paralyzed, the sensations are dulled and the motor functions are suspended, the depraved metabolic processes give rise to a weak heart and respiration and the blood fails to circulate It is impossible in such a condition of shock to at once restore these over stimulated nerve-cells from their paralyzed state to one of normal activity, but by restoring the normal volume of blood, nutrition is restored to the cells, there is an increased heart and respiratory function and the metabolic processes throughout the body are restored during the time that these nerve-cells are resting

We have for our justification of the use of infusion in conditions of septicemia the two important facts of the increased activity of the leucocytes and the increased activity of the skin and kidneys whereby the toxic products may be destroyed or eliminated There is the further advantage of diluting the poison in the blood

The exact action of saline infusion in any condition has not been as accurately worked out as the importance of the subject justifies, but whatever it may be, there is no other remedy comparable for the relief of the symptoms of shock and hemorrhage The changes that take place in the patient are immediately perceptible There is a restoration of the normal heart action, pulse volume and respiratory function, the unconscious and paralyzed patient opens his eyes, speaks and invariably begins to move In one to two hours there is a rise of temperature not over 100 degrees F, and there is a diuresis with no albuminuria Most important of all, the restoration of function is permanent With such points as these in favor of a remedy it is difficult to see how it can fail to meet with universal practice

DOUBLE-HEADED MONSTERS IN FICTION

The utilization of pathologic data in fiction has become so widespread that the neglect of the rich field of teratologic conditions must appear rather [illegible] the casuistic discussions of the marriage of the Siamese twins and of the marital status of the pyopagic (backunited) "Double-Headed Nightingale," it seems strange in these days of realism, that so little use should be made of double-headed monsters in fiction This appears particularly unaccountable, when the legal, amatory, ethic and marital complications thereon resultant (capable of producing such beautifully intricate plots) are considered The "Double-Headed Nightingale" was legally decided to be two persons, marriage of one man to whom would result in bigamy Under certain legal opinions in Illinois, simultaneous marriage with more than one woman does not constitute bigamy in that State Under this construction of the Illinois statute regulating marriage, the marriage ceremonies must be separate to constitute bigamy Marriage in Illinois with the "Double-Headed Nightingale" could easily be made a practical simultaneous procedure and hence legal Under the intricacies of the New York divorce law, a New York marriage could, under certain technicalties, be easily set aside in Kansas, and a second marriage thereafter would be legal As the first marriage was still legal in New York, a man could easily have two wives in that State without committing bigamy One half the "Double-Headed Nightingale" could be married in New York and the other (after proper divorce proceedings) in Kansas, both halves being legally wives of the same man in New York Despite those tempting literary possibilities fiction has neglected this field BESANT employed, it is true, a double monster, but only as a portent in "For Faith and Freedom" Through the pages of that clever parody, "King Solomon's Wives," flits a double headed caricature of RIDER HAGGARD'S terrifying Gagaool With these exceptions, fiction has until lately neglected the fertile literary possibilities of female double-headed monsters

It was reserved for an Ohio physician to demonstrate the brilliant outlook for fiction in this particular Dr W C COOPER of Cleves, Ohio, has proven the great value of the double-headed monster in fiction in his "Mystery of the Wetherton Mansion" His heroine is an atlodymus with two heads united at the neck to a single body This monstrosity is the child of a wealthy judge of Southern Illinois, who is a man of broad, general culture Dr COOPER is called to attend the wife of the judge in confinement Owing to severe dystocia the patient becomes moribund Whereupon Dr COOPER performs Cæsarian section, delivering an atlodymus thus described by himself The heads and necks were entirely distinct, the union of the necks occurring at their junction with the thorax It was highly probable that tracheæ, esophagi and blood vessels became uniform and common on entering the body Young as this infant was, it was plainly evident that each head was directly individual It could be seen too that the child was ambidextrous There were undoubted signs too that one head bordered strongly on the brunette and the other on the blonde type They could nurse separately or simultaneously The only difference was that when both nursed at once the appetite was satisfied twice as quickly as when only one of them was fed The body was that of a girl

The Southern Illinois village, where the judge resides, is cursed by the usual spinster gossip, with prurient prudery and mendacity One of these, loitering around the keyhole of the lying-in room, hears what she considers suspicious remarks by Dr COOPER An attack of cholera infantum, due to an uncleansed nursing bottle, calls Dr COOPER (during the week following the delivery) to the mansion to attend the monstrosity On his way back to his office he is waylaid by the female "Paul Pry" aforesaid Injudiciously, but professionally, hoping to check her inquisitiveness, he informs her that the monstrosity is dead, whereupon she has him arrested for murder Through the judge's influence and cash, the charge is withdrawn Popular rumor imputes the death of the monstrosity (which is assumed to have taken place) to natural causes The monstrosity is, however, brought up in the seclusion of the mansion, to womanhood, and carefully trained by a governess sworn to secrecy The judge, who has not recovered from the shock of the death of his wife and the birth of the monstrosity, finds from growing age and mental infirmity that he needs a private, confidential secretary A young lawyer named Jack obtains the place, and in most things, the judge's confidence The secret of the monstrosity is, however, kept even from him As the judge has exhibited continuously increasing mental depression from the time of his wife's death, his suicide is not a remarkable outcome The agitation in the household reveals for the first time the existence of the monstrosity to the private secretary The heads of the atlodymus have been called Alice and Anna

"Jack falls hopelessly, helplessly in love with Alice In the innocent frankness of her unsophisticated nature she confesses without a moment's hesitation that his passion is fully reciprocated Alice and Anna are nearly inconsolable over their father's death Alice, however, rallies from the shock as time drags by She has Jack's love to lean on and feed on Not so with Anna, who being in a decline before her father's death, receives from that calamity a tremendous downward impetus, and has not the tonic of a lover's helpful sympathy and counsels to brace her It becomes rapidly evident that she is sinking back to God She is absolutely certain that she can die without involving the death of her sister Alice herself also feels sure of this It seems that some infallible intuition guides them to this conclusion Since her father's death, and especially since Jack's appearance on the scene, Anna becomes positively anxious to die, there is nothing in the world left for her to live for

However dearly Alice might love her, the conditions were such that life for herself meant wretchedness for her sister Unless her sister could be happy, she could not If she should die, two would be perfectly happy If she should live, three would be miserable Her intense desire to die no doubt hastened that event, which occurred about two months after her father's death The necessity for amputation is evident, but Alice insists on holding the corpse two days to comply with the custom of civilized people Alice makes a quick recovery after the amputation, and her neck rapidly grows into correct relationship to her body The outcome is a faultlessly beautiful woman, whom "to see is to love"

Her feelings after her separation from her sister, Dr Cooper (in accordance with the well-known literary canon) leaves to the imagination, for whose assistance the fact is mentioned that the head of the sister was preserved in alcohol to be buried with Alice in the same coffin

It must be obvious from this résumé that Dr Cooper has excellently opened a fertile relatively unworked field of limitless possibilities in fiction He might have instituted a rivalry between the two heads, or might, with the aid of the New York and Illinois statutes, have had a simultaneous marriage He, however, preferred to blend the older romantic ideas with his fiction, and skilfully employed the self-sacrifice of Anna to relieve the general realistic gloom of the story What the possibilities for sensational fiction are in this field is shown by the fact of the case reported years ago by a Brazilian physician, where a double-headed male pyopagus fell in love with a single-headed female syndelphus with a double pair of lower extremities and two sets of pelvic organs It is hoped, however, that future delvers in this field of fiction will emulate the delicacy of Dr Cooper in their productions

MEDICAL CONFIDENCES AND MEDICAL TESTIMONY

The question of medical confidences is a perennial one, and will be till some uniform regulation or understanding is reached in regard to it It is, moreover not a subject that can be left exclusively to the ethical sense of our profession, it has its legal bearings entirely apart from what we may or may not consider our individual duty in regard to it, and the question may arise at any time whether as physicians we shall be compelled to state for the benefit of lawyers and their employers what we may have received as confidential communications from our own clients As the case usually stands, and in most parts of our country, the legal has a decided advantage over the medical profession In a few States, it is true, there are rigid statutes in this regard, that would even quench the gossip that thoughtless men have sometimes been guilty of, under penalty, but these, like most other statutory enactments, are possibly evadable by clever lawyers, one of whom has said that he never saw a law framed that he could not drive a coach and four through Where such laws do not exist they have a free hand, and doctors are generally at their mercy

There is another aspect of the case, and one even less satisfactory, in the fact that there are physicians of reputable standing in the profession, whose sense of medical honor is not sufficiently high to keep them from voluntarily violating professional confidences for a fee, sometimes a pitifully small one at that Let a case for damages against a railway company be supposed, whether meritorious or not is indifferent to the present question, the defendant corporation naturally seeks in every way to find something to break the force of the plaintiff's claim This may often be best done by attacking his former health record, and it is not infrequently the case that physicians who have treated him prior to the injury complained of, are found willing and even anxious to go on the witness stand to reveal facts obtained by them in confidence that may be utilized in the defendant's case

It is not a valid excuse for such a course to say that by it a fraud is prevented, for this implies an absolute knowledge of all the facts down to date, which is rarely possessed by these witnesses, and it is therefore also within the bounds of possibility that by their testimony they are assisting in an act of rank injustice The only proper professional course would appear to a right-minded man in such an emergency to be to keep out of the case altogether and leave the medical testimony entirely to the corporation's and plaintiff's doctors and experts Those who are authorized by the parties interested have, of course, a right to testify, but without such authorization it is difficult to characterize the conduct of a physician who reveals voluntarily what he has learned in his professional capacity, and that to his patient's damage, as anything else than dishonorable Even the advertising specialists, who are reckoned as without the pale of legitimate medicine, have sometimes a higher ethical standard in this respect than some of the so-called regular members of our profession

Of course there may be occasions when the rule of professional secrecy does not hold in a strictly individual moral point of view Treason and murder, and some other exceptional conditions might be excluded, and no one would blame a physician if, for example, he should do his utmost to prevent, let us say, the marriage of an innocent female to a man rotten with syphilis or suffering from any form of actively contagious venereal disease He might under some interpretations of the laws make himself liable for damages, as has actually been the case in France, but there marriage is looked upon more as a financial transaction than it is in this country, and courts conduct themselves accordingly In such a case, moreover, very much may be done without actually violating medical confidence, which should be only done as a very last resort, all other means having failed The physician should, moreover, be sure of his facts and be able to demonstrate them and the honesty of his motives before a judge and jury, as well as to convince them that he had acted with due discretion and had given no needless publicity to discreditable suspicions The failure in these respects was undoubtedly the cause of the excessive award of damages in the celebrated PLAYFAIR case in England not long since, and a similar result might easily follow like conduct in our own country Even without special statutes against it the physician, when he violates professional confidence to the damage of his patient, does so at a certain risk

If such is the case in the general intercourse of man with his fellows, it certainly ought not to be the privilege of the unethical physician to voluntarily reveal the facts entrusted to him before a jury to the intended injury of his former patient, and to do this for a fee, thus dishonorably making a second profit from the confidence entrusted to him Nor should it be the law that he can be compelled to testify or even allowed to do so in cases where he has not a personal interest involved, as in suits for remuneration or in personal defense of his property or his liberty In all other cases his knowledge thus obtained should be privileged, professional medical confidences thus gained should be held sacred in courts of law Where there is now no recognition of this by the courts, legislation should at the earliest possible moment supply the deficiency

PROGNOSIS OF EPILEPSY

Epilepsy has been studied more or less diligently for the past three thousand years Notwithstanding this fact, we are surprised, in the review of the literature, to find how few good general rules there are for a basis of prognosis in this affection

Since we have established colonies and special institutions for epileptics, we hope to see something done to aid the general practitioner in extricating himself from the predicament of making a prognosis in this disease

As yet we have to learn of an institution for epileptics in which a department has been established for experimental psychology to be used for the end of a more definite study of epilepsy When such a department shall be established in connection with these institutions, similar to those referred to by Dr FREDERICK PETERSON in his inaugural address before the New York Neurological Society, then we shall be able to measure the exact degree of motor, sensory, sensory motor and idio-sensory and motor defects of the epileptic and ascertain to what extent the hereditary element is at fault in the epileptic predisposition Again, we shall be able to find the state of the mental faculties, how much they have undergone impairment in any single case When we take into account that an insane epileptic has never yet been known to recover from his epilepsy, we at once see how important such study becomes

We have reason to believe that the acquired impairment, mental as well as physical, may be separated in a measure, by careful observation, from hereditary impairment so often found in this disease

Up to the present time sane epileptics have not been brought together in this country in sufficiently large numbers to warrant such thorough studies, but we hope that the Craig Colony of New York State, established at Sonyea, will speedily grasp the importance of such work in a field where comparatively little has been done We trust that such study will be attended by success and profit to the scientific medical world

CHOLERA BANDS FOR TROOPS

In the early days of the Civil War the soldier from the north was not considered to be properly equipped for service in the south without a havelock or white cover of washable material for his forage cap, with a flap falling to the shoulders to protect the head and neck from the scorching sun Ladies all over the land made these havelocks, but the troops in the field never wore them On a hot day's march the soldiers put one or two broad green leaves, oak, maple or sycamore in the crown of his cap as an all sufficient protection At the present time the havelock seems to have been forgotten, and cholera bands or abdominal bandages have become the imperative necessity, to supply which, for the protection of our soldiers in Cuba and the Philippines against diarrhea and dysentery, the patriotic ladies in many of our cities have been sewing assiduously for several weeks back It is generally understood among the profession that the flannel bandage has a reputation in tropic climates as a prophylactic for intestinal affections Professor PARKES in his "Practical Hygiene," states in discussing the causation of diarrhea and dysentery that in almost all hot countries chilling of the abdomen is considered particularly hurtful, and shawls and waistbands are usually worn, giving as an instance the cummerbund of India, but it is difficult to understand how this knowledge became popularized so quickly, and with such practical results at the present time Various patterns have been used The simplest consists of an apron of flannel, six or seven inches in length, tied around the waist with tapes Others are more elaborate, fastened with buttons, hooks and eyes or eyelet-holes and laces but whether the men will treat them as their fathers treated the havelocks appears as yet to be unknown The subject, however, will soon be ventilated and placed upon an official footing, for a board of medical officers has been appointed by the War Department to meet in Washington, D C, for the purpose of considering the question as to whether or not the Government should issue the so called "cholera bands" for the use of United States troops in the field, the idea apparently being that if the bands are essential to the welfare of the men their supply should be furnished officially, and not be left to voluntary contribution The board consists of Colonel DALLAS BACHE, Assistant Surgeon-General, Lieutenant-Colonel CHARLES SMART, Deputy Surgeon-General and Major WALTER REED, Surgeon

CORRESPONDENCE

Pottery Evidences of Leprosy

NEW YORK, July 20, 1898

To the Editor —I send you a translation from the *Dermatologische Zeitschrift*, May, 1898, on Huacos pottery evidences of leprosy in pre Columbian America, a continuation of the discussion on my paper, "The Question of Pre Columbian Leprosy in America," and my photographs in the Berlin Lepra Conference Dr Glück entirely agrees with me that these Peruvian figures show no characteristics of leprosy (*Vide* "Pre Columbian Leprosy," JOURNAL OF AMERICAN MEDICAL ASSOCIATION, April, May and June, 1895) Virchow, in his position, is clearly wrong ALBERT S ASHMEAD, M D

LETTER OF MR COUNSELOR OF SANITATION AND CHIEF PHYSICIAN, DR LEOPOLD GLÜCK, IN SERAJIVO TO THE DERMATOLOGISCHE ZEITSCHRIFT (PROF LASSAR'S PAPER), BERLIN

Mr Polakowsky was kind enough to send me a reprint of the Berlin Anthropological Society of what Virchow says about the morbid representations on old Peruvian pottery In the last of the communications, of Dec 18, 1897, Mr Polakowsky refers to my humble person, saying 'You will find three papers about the leprosy of the nose in the first volume of the communications of the Lepra Conference Among them there is also a great work of Dr Glück, chief physician of the lepra hospital in Serajivo This gentleman said to me, after the October meeting, that I had been quite correct in my judgment that these vases did not represent leprosy He asks me to say at the next opportunity, referring to himself, that the nasal leprosy has another aspect, that the bridge of the nose sinks, that the openings of the nose are closed, that the wings of the nose swell considerably, giving the idea of a opera glass, these are the *ipsissima verba* of Dr Glück Dr Leloir, one of the first leper physicians, who died prematurely, uses the same designation ' It is correct that after the meeting of the Berlin Anthropological Society, Oct. 16, 1897, at which I assisted, on the invitation of Dr Virchow, as a guest, I have declared to Mr Polakowsky that these vases represent no leprosy, it is likewise true that I have spoken with the said gentleman about the deformations of the nose in lepers, but I cannot remember whether I have mentioned then, only the opera glass nose, or also the other deformities of this organ At any rate I want to declare here that I distinguish not one, but three types of nasal deformities on leprosy, as appears from my report published in the first volume of the Transactions of the Lepra Conference '*Leprosy of the upper respiratory and digestive tracts* '

"But it was not the defects of nose and lips alone which compelled me to believe that the vases did not represent leprosy In considering those vases, I asked myself what form of leprosy we could have here? The faces of the fingers show no vestige of leontiasis, the tips of the ears are neither thickened nor elongated, the hands are not swollen, therefore we can exclude lepra tuberosa, especially as extensive mutilation of the inferior extremities never occurs in this form of leprosy It could then only be lepra nervosum sen anesthetica It is true, I know neither by the literature nor by personal observation any case of lepra nervosum in which the tip of the nose and of the septum, as well as the upper lip, have perished, yet this would not be impossible, especially if one considers that paralysis of many facial nerves, with consequent inflammations and ulcerations of the skin, are not particularly rare in this form of leprosy The mutilations (?) of the legs, it is true, do not occur frequently either, in the form which is represented in our vases, but this is also possible in lepra anesthetica But now the hands of the figures show absolutely nothing abnormal, which alone speaks quite decidedly against the assumption of leprosy

"It may happen here and there, now and then, that the affections on the legs are more advanced than on the hands, but it is entirely improbable that the latter, in such a later stage of disease as that represented on the figures, could remain entirely intact The muscular atrophy and the contractions of the fingers are, in all cases of lepra nervosum which have reached any considerable degree of development, manifestations so conspicuous and characteristic, that the old Peruvian artists would certainly have been aware of them

"Finally, as to the legs, I see in them no mutilations, but amputation stumps, as those which remain after a regularly executed amputation of the leg The stump has a smooth hemispherically shaped extremity, deep, horizontal or vertical furrows, which must be considered as retracted scars after flap amputation on the legs

"If we consider all these facts, one becomes convinced that the old Peruvian potteries which Virchow, on the 13th of October, 1897, has demonstrated in the third sitting of the Lepra Conference, and which afterward have repeatedly been the object of debate in the Berlin Anthropological Society, certainly represent no leprosies

"It must be left to the investigator of the old Peruvian civilization to explain in a positive manner the meaning of the vases in question, that is, of the figures which adorn them, the leprologist can do that only in a negative manner, by declaring that the affections which are apparent in them can certainly not be considered as leprosy "

A Department of Health

CHICAGO, July 28, 1898

To the Editor —Congress adjourned, and with the knowledge presumably (see reports of Senator Gallinger and others, from personal observations made while investigating certain parts of Cuba last spring of the great need and urgent necessity of reform in sanitary matters among the unhappy people of that desolate island) or oversight, that legislation upon this all important topic was *apparently either relegated to the waste basket, pigeon holed or deferred* Call it by whatever term we will

For years the writer, in his feeble efforts, has tried to use what influence he possessed to promulgate argument, why our government should establish a department of health, having at its head an efficient, painstaking, scientific medical secretary A large majority, perhaps 90 to 95 per cent, of the medical profession throughout our country have favored this project. The JOURNAL has repeatedly published the same views The great majority, as just stated, of the noble men in our profession favor this, and as such are good samaritans (not for self aggrandizement, as possibly some might interpret, but for "the welfare of our people"), and our National legislators should have listened to our appeal, *i. e*, paid heed to the bill prepared by the special committee of the AMERICAN MEDICAL ASSOCIATION upon this timely measure Congress, in my opinion, will doubtless do so in due time, but, in my judgment, this much needed legislation should have been enacted years ago Had this been done, an intelligent commission, composed of medical scientists from the United States, would doubtless long ago have been detailed to visit the Philippine Islands, the Canary Islands, the Ladrones, and other Spanish territory, and report upon the *statum praesens* of the diseases that prevail or are indigenous to those islands, and upon the sanitary and other conditions existing among the inhabitants A full knowledge of the sanitary conditions of Manila, Santiago, San Juan, Porto Rico, the city of Ponce, Havana, and of all other portions of those pest-ridden cities, and in the islands named, would have been officially known, not omitting, of course, Honolulu, the East Indies, etc , as well as scores of other places that might be enumerated

This brings the writer to mention that the hardships and suffering, by illness and otherwise, of our brave soldiers at the front would doubtless have been greatly mitigated and unknown numbers of our brave sons saved from death by yellow fever, if such a branch of our Government had been established Indeed, is not this a crying necessity? Is this not, *Jure humana et Jus divinum?* Very sincerely yours,

Liston H Montgomery, M D

The Probate Court

Chicago, July 30, 1898

To the Editor —I am glad to see Dr Galloway has the courage to relate his experience with Judge Kohlsaat. It probably coincides with the experience of the majority of physicians who are so unfortunate as to be obliged to prove their accounts in the probate court

Some months ago I filed a claim against an estate in which the executrix was willing to allow the claim at $8 a visit, and Judge Kohlsaat arbitrarily cut the claim down to $2 a visit, not inquiring into the circumstances of the case but remarking that the court would never allow a claim for more than $2 a visit I admire a judge who looks sharply after the interests of heirs, but think it is time we as physicians should take a hand in the election of the probate judges and try and secure the election of judges who will give us just fees and not humiliate us in court Yours truly

John A Robison, M D

PUBLIC HEALTH

Behring's Tetanus Antitoxin has a record to date of eleven recoveries and eleven deaths, according to the *Munich Med Woch* of May 24

Sanitation of Match Factories —The recent agitation in France has resulted in the production of a sanitary match paste which contains none of the dangerous white phosphorus and is harmless alike for the workmen and the public It is claimed that the new matches made with it are more than satisfactory

Tubercle Bacilli can be readily detected in milk by adding a few drops of peroxid of hydrogen to a sample of the milk in a test-tube and then a few drops of parraffinglecadiamin, C_6H_4 2(NH) The color of the milk remains unaltered unless it contains tubercle bacilli, when it at once turns a grayish green on being shaken —Professor Storch *St Petersb Med Woch.*, June 11

Doctors Opposed to Marine Hospital Extension —John B Corliss has run afoul of the medical fraternity He has, in a euphemistic way, called Dr C Henri Leonard a liar, and the Doctor does not like it. Besides, the several medical associations think that Corliss has not acted square on their pet measure of a department of health The agitation for such a department was started about six years ago, by the American Medical Association It was proposed to make the secretary a cabinet officer, to have the Federal Government exercise control over the hygienic condition of the country and over intercourse with other nations President Cleveland recommended the measure in one of his messages, and the doctors have been driving at it since During the session of the Michigan State Medical Association last May, it transpired that Corliss was pushing some health bill It turned out to be the "Hepburn bill," which enlarges the scope of the Marine Hospital Service The doctors have no use for this measure, and adopted condemnatory resolutions, which were sent to Corliss Corliss wrote back that the medical fraternity had acted without proper investigation, that it was his "duty" to report the Hepburn bill, that the bureau scheme would be a "very large expense" He trusted Dr Leonard would "undo the evil" he had created by the publication of "facts not true" This made Leonard hot He replied that Corliss had quibbled, and warned him that the Hepburn bill was distasteful to the entire medical fraternity He criticised Corliss' plea about "expense" and reminds him that the doctors may conclude that some Congressmen are too "expensive" This correspondence was published in the medical journals and evoked a letter to Leonard, from Dr Wingate, chairman of the Public Health Committee of the American Medical Association, in which he says that Corliss obstinately favors the Hepburn bill, and that he simply would not listen to arguments for any other measure Dr Wingate intends to place the entire correspondence in the hands of Senator Spooner and Congressman Otjen, strong friends of the department bill Corliss will have more explaining to do than he had with the ticket brokers when he found himself in a somewhat similar position —*Detroit News*, June 26

The U S A Hospital Ship "Relief"—The finest hospital ship that ever floated is the *Relief*, just fitted out at the Brooklyn Navy Yard, under the charge of Surgeon George H Torney, U S A The result is a great credit to that officer, who has given his personal attention to every detail of construction The *Relief* was formerly the steamer *John English* (*Vide* Journal, July 2 p 42) plying between New York and Portland There are two wards on the promenade deck, fore and aft, two on the main deck, and another on the after berth deck Not less than 350 patients can be accommodated in the five wards as now arranged, and by the addition of extra cots it is estimated that 500 wounded men could be cared for in an emergency The officers' ward is forward on the main deck, and does not differ materially from the others On the after main deck is the surgical ward, and adjoining this is a good sized and well lighted operating room In it are three operating tables and two cabinets for surgical instruments The entire interior of the vessel is finished in white enamel paint with gold trimmings The floors of the wards and operating room are covered with rubber tiling The cots are of iron, painted white, and most of them have an upper and a lower berth, arranged like a sleeping car section, to accommodate two patients In each ward are baths fitted with the Gegenstorm system of hot and cold water, by means of which water may be drawn and kept at any temperature desired, by simply turning a lever above tub The plumbing is said to be the finest ever put on board a ship On the berth deck are staterooms to accommodate fifteen male and fifteen female nurses, and forward are the roomy and well lighted officers' quarters The ship carries a disinfecting plant, an ice plant capable of producing 200 tons a day and an electric plant which supplies power for incandescent lights throughout the vessels and also for a 7000 candle-power search light, which is operated from the pilot house In addition to this all the wards and the quarters of the officers and the nurses are provided with high power electric fans, which are expected to cool even the heated air of Cuba A small portion of the after promenade deck has been left open at the sides, and here hammocks are to be swung for the benefit of convalescent patients Besides the appliances already enum erated, the *Relief* has a carbonater for supplying mineral water, two X ray outfits to aid the surgeons in locating bullets, a microscopic laboratory, and a well equipped photographic dark room On the main deck is a telephone, by means of which communication may be established with the shore or with other vessels The ship carries eight life boats, four life rafts and two 28 foot steam launches Her exterior is painted white, except for an olive green band which will encircle the vessel, in accordance with the requirement of the Geneva convention An apparatus has been devised by means of which the sick or wounded may be hoisted on board with the least possible trouble This consists of a steel boom, which can be swung over the deck of a war ship, and is fitted with tackle for hoisting

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NECROLOGY

William Pepper, M D , the friend of young men, is not now numbered among the living He has been cut down in the height of his glory When word came from California, whither he had gone for a brief respite from his labors, announcing news of his death from angina pectoris, it fell like a pall over the hopes and ambitions of many men in Philadelphia His father, the elder Dr Pepper, was one of the eminent men of his time, and therefore, by birth and by nature, his advent into the world was distinguished Dr William Pepper was born in Philadelphia, Aug 22, 1843 His early life was one of progress, and his whole career one of work and usefulness The keynote of his success was intuition, tact, persistence and constant application. No doubt he would have succeeded in any profession he might have chosen Dr Pepper graduated from the University of Pennsylvania when 19 years old and at the age of 23 received the degree Doctor of Medicine From that time onward his life was devoted to utility and to the elevation of his profession At the age of 25 he became professor of pathology of his Alma Mater and of his beloved college In 1840 he was made professor of clinical medicine and at the age of 33 succeeded Dr Alfred Stille as professor of theory and practice of medicine in that institution In 1881 he was elected provost of the University and resigned in 1894 His administration was marked by unparalled success If you wish to see evidences of his genius in Philadelphia "look around you" From a university of modest proportions, he built one which now covers fifty-two acres of ground, and aggregating, all told, $5,000,000 in value Dr Pepper has given hundreds of thousands of dollars to the University Under his administration there arose the Wharton School of Finance and Economy (1881), the Department of Philosophy for Post-Graduates (1882), the Department of Veterinary Medicine (1883), the School of Biology (1885), the Department of Physical Culture (1885), the School of American History (1891), the Department of Archeology and Paleontology (1891), and the Department of Hygiene (1892) He was instrumental in building the Agnew Memorial Wing to the University Hospital, the Maternity Hospital, the Wistar Institute of Anatomy, and he built and endowed the William Pepper Laboratory, a memorial to his father His fervent hope was that the University should outrival the colleges of the old and new world In the medical department his efforts have always succeeded, and his endowment of $50,000 made this University one of the leading spirits among all others in requiring a four year graded course He brought together in this teaching faculty many of the foremost men of his day Agnew, Leidy, Wormley and Goodell are gone, but there yet remain Wood, Ashhurst, White, Tyson, Piersol, Reichert, Penrose, Hirst and Abbott among the living He not only gathered to this center the older men, but also looked to younger men to perpetuate it when others are gone He gave them encouragement and they honor him for it Always showing an intense zeal for his work, he animated others who came under his direct teaching A man of keen perception, a wonderful judge of human nature, and of profound learning, he was bound to succeed As a diagnostician, possibly no man was his superior His mind was ever alert, ready to grasp the hidden thoughts of the patient and to detect the varied pangs of disease He was artful to a wonderful degree and elicited symptoms which often defied the senses of others His talents secured his reputation and his private practice was immense As a lecturer he had few equals His language was clear and his phrases most plain. He had a faculty of readily imparting the knowledge which his energies had brought him and they were untarnished when he imparted them to others Dr Pepper's talents were versatile and his great vitality gave him no rest He was constantly reaching out for other useful fields than medicine He was a man of executive ability, an organizer, as shown by the establishment of the Philadelphia Museum, of the School of Industrial Art, and many public enterprises He was a leader in the American Society for the Extension of University Teaching, and always exercised an interest in all public measures which brought good to his fellow man Dr Pepper's reputation was not merely local, his name is known throughout the medical world He had been knighted by the King of Sweden and received the degree of LL D from both Lafayette and Princeton As a writer he is well known Who has not heard of Pepper's "System of Medicine, and of the "Diseases of Children" by Meigs and Pepper? A visitor to his office would always find him occupied, and this incessant toil sowed the seeds which at last broke him down An attack of la grippe last year left its mark upon him, which a journey to Florida never relieved His manner was kind, gentle, wholesouled, and his demeanor always suave, frank and affable He made friends readily

His name has been honored by h and State,
the two Americas, being p an Am
Medical Congress, and by he age o
lacking one month, his life ds
many and their grief is d

WILLIAM PEPPER, M.D

Flexion of the Uterus and its accompanying pains are attributed by Schaffer to anomalies in innervation producing convulsive contractions in the posterior wall.—*Monatsheft f. Geb. u. Gyn.*, January.

Hospital for Red Cross.—Henry M. Flagler, the Standard Oil millionaire, will, it is alleged, build a hospital at Miami, Fla., for the Red Cross, to accommodate 1,000 patients. The cost of the building will be $40,000.

Gift to Harvard Medical School.—The late James Stevenson of Brookline, Mass., a wealthy hotel owner and real estate dealer, has promised in his will $10,000 for the establishment of two free scholarships.

The Value of Vaginal Disinfection in childbed can only be decided when the temperature is noted every two hours. Kalmus urges the general adoption of this practice to decide this important question.—*Cbl. f. Gyn.*, No. 19.

The Tomato as a Cause of Cancer.—A N. Y. contemporary gravely publishes the statement that the tomato, eaten in any form, can not cause cancer. The doctrine of signatures explains away the difficulty and there are still extant many pathologic plates which suggest decided similitudes.

National Relief.—The National Relief Committee reports from New York City some generous contributions, among which was one by Mr. D. O. Mills of that city for $5000, to assist in the establishment of ice producing plants at Jacksonville, Key West, Jekyl Island and Santiago or Guantanamo Bay.

The Bacillus of Whoopingcough.—Spengler and Davos, *American Med. Surg. Bulletin*, have isolated a bacillus of whooping cough which resembles the Pfeiffer influenza bacillus. This is probably the same organism as that of Czaplewski and Hensel (*vide* JOURNAL, Jan. 29, 1898, p. 280).

The Proportion Between the Prostate and the Testes in various vertebrates indicates that these organs partially substitute each other, as in animals with large testes the prostate was extremely small, while with small testes the prostate was exceptionally large.—Disselhorst, *Munich Med. Woch.*, May 24.

The Cure of Glaucoma by Resection of the Superior Cervical Sympathetic Ganglia is reported by Jonnesco, who has performed the operation seven times for this purpose and found the improvement marked and progressive, even in cases that had resisted iridectomy.—*Presse Méd.*, June 8.

A Small Epidemic of Meningitis Cerebrospinalis has been noted recently in Paris, occurring in scattered localities, showing no evidence of direct contagion, as the microbe is enclosed in the skull and spinal cavities. The nasal or aural passages are considered the most probable routes of infection.

Radiography in Dental Surgery has been much improved by the use of the radio condenser (JOURNAL, xxx, 988) and "metallic rubber." Some interesting radiographs were recently presented at the Paris Acad. de Méd., among them some that showed the fully developed canines buried deep in the palatine arch, with no possibility of eruption.

The Resistance of Pathogenic Germs in a Fatty Vehicle to the Gastric Juice has been demonstrated by the Italians. Mixed with fat, oil or butter, typhoid, cholera, anthrax bacilli and Fraenkel's diplococci remained unaffected by fresh gastric juice indicating that they pass intact into the intestines.—*Munich Med. Woch.*, June 21.

An Instructive Case of Eclampsia is reported by Vinay, the patient apparently in the seventh month, IV para, the eclampsia of the most severe type, child apparently dead. The patient recovered after artificial delivery followed by the injection of three liters of salt solution, with the patient kept under the influence of chloroform several hours, taking 300 grams of chloroform in all.—*Klin. therap. Woch.*, June 19.

Sero reaction and Immunity.—A communication to the Paris Académie de Méd. states that although Arabs are rarely affected by typhoid fever, examination of the blood of twenty three subjects failed to show any sero reaction, which is a new proof that the agglutinating power is not necessarily connected with immunity, but is an infection, or defense reaction.

Peritoneal Adherences do not follow thermocauterizing unless there is simultaneous infection, Ten Brink asserts as the result of numerous experiments on guinea pigs. The infection of the cauterized spot with staphylococci resulted in adherences eight times out of nine. He is confident that these conclusions will apply also to man.—*Munich Med. Woch.*, May 31.

Psychosis Consecutive to Iodoform Treatment.—Frankenburger reports a patient of 50 years treated with iodoformol glycerin injections (6 weeks, 4, each 0.5 gram iodoform) for a cold abscess in the thigh, which healed, but a psychosis developed, with melancholia, mania of persecutions, disturbed sight and hearing, etc., which persisted long after cessation of the injections and required removal to an institution.—*Munich Med. Woch.*, May 31.

Pain in the Bones after Extirpation of the Spleen has been observed in a recent case operated by Lucetti. The pain was intense, especially in the diaphyses of the long bones. There were no other unusual phenomena, the glands did not swell, and the pains were evidently merely the results of the sudden vicarious demands upon the blood manufacturing bones.—*Munich Med. Woch.*, June 7; *Giorn. Intern.*

De Renzi's Treatment of Pneumonia.—Fanoni, in the *New York Medical Journal* of May 7, claims for this treatment that it increases the strength and rapidly diminishes the fever. He considers it a remedy of undoubted efficacy, as indicated in the diseases caused by Fraenkel's bacillus, namely, epidemic cerebro spinal meningitis, pleurisy, pericarditis, peritonitis, the arthritis of pneumonia, etc.

Diphtheria of the Scrotum.—Dr. le Clerc of Brussels has observed three cases of diphtheria in which the local process was confined to the scrotum, which swelled as large as a child's head. In one case the throat was also affected. All presented the symptoms of general diphtheritic intoxication, and recovered with antitoxin and local measures, but extensive plastic operations were necessary to replace the destroyed tissues.—*Dermat. Ztschrft.*, May.

Multiple Neurotic Gangrene of the Skin.—An interesting case is described by Dehio, in which any slight fright, the falling of a heavy book, the spilling of a bottle of wine on the tablecloth, or anything of the kind, was at once followed by the development of a patch of gangrene on some part of the body, hand, foot, arm, cheek, which healed in a month, more or less, leaving a deep scar; patient a well to do young woman, otherwise healthy.—*St. Petersb. Med. Woch.*, June 11.

A Clamp to Draw Down the Rectum in extirpations that closes the lumen at the same time was presented at the German Congress of Surgery. Between the semicircular jaws a bullet-stopper moves up and down on a slide. This is inserted in the rectum and screwed firm, the jaws clamping together around it. The stopper can be slipped out at any moment without opening the clamp. It is illustrated in the *Cbl. f. Chir.* of July 2.

Rovsing's Study of the Infections of the Urinary Passages runs through the *Ann. des Mal. Genito Urin.* from September to March. He does not endorse the generally accepted theory which ascribes to the bacillus coli the principal rôle in these infections, but announces the existence of a non suppurating catarrhal affection caused by non pyogenic, urine-decomposing microbes. Any pyogenic microbe may induce cystitis, whether inoculated in some lesion of the mucosa or arriving by metastasis, but in most cases it is due to pyogenic, urine decomposing microbes, the study of which may result in a practical sero-therapy The bacillus coli is the most frequently encountered micro organism in these passages, usually in the mild form of bacteriuria or, when there is lithiasis, in a slight suppurating pyelitis In a few cases it may induce cystitis and nephritis He even considers it possible that the antagonism between the bacillus coli and other microbes may transform malignant into benign infections His work is based on 125 observations

Lack of Sensibility in the Female Urogenital Organs is important from a medico legal point of view as it renders the assertions of women in regard to therapeutic or criminal manipulations unreliable The sense of touch and localization is very defective Calmann reports that he packed the vagina of some patients with cotton, or with shot wrapped in cotton, to a weight of 100 grams, without any knowledge on the part of the subjects of the nature of the substances inserted The urethra and cavum uteri are sensitive to pain, the remaining parts much less so —*Berl klin Woch* , No 15

Ephemeral Pneumonia.—Molteni has observed a number of cases in an epidemic of croupous pneumonia, and describes two at length in the *Gaz d Osp e d Clin* of June 5 They commenced with a sudden severe chill lasting half an hour, with unconsciousness, temperature rose to 40 5 degrees C , respiration 44 and pulse 130, but the disease passed through all its phases, including aphasia, pulmonary edema and slight paralysis, to the crisis and commencing convalescence within twenty four hours The streptococcus was found with Fraenkel's diplococcus in the sputa

Local Anesthesia is supplanting general to such an extent that the number of operations in which chloroform was used at Mikulicz's clinic has fallen from 815 to 324 during the past year Manz reduces the pain from the ligature in Oberst's "regional cocain anesthesia" (*vide* JOURNAL, xxx, 496, 736 and 1236), by tying a second ligature close to the first when it becomes painful and removing the latter, repeating as often as necessary He has used this method satisfactorily for severe operations on the lower arm, but prefers a 0 5 per cent solution Mankiewicz advocates simultaneous injection of morphin, as so much of the injected fluid escapes through the incision

Tetanus Toxin Increases the Pressure —The increase is not proportional to the dose of toxin but is closely connected with the contractions of the muscles, as is evidenced by the fact that curare arrests it. This effect of tetanus toxin is also connected in some way with the bulbar vasomotor center, as section of the medulla in the neighborhood of the cervical enlargement likewise arrests it. The frequency of the pulse is increased, and also the excursion of the vessel The respiration is rendered systematically slower, while the expirated carbonic acid increases in progressively regular amounts *Munich Med Woch* , June 7 , from *Morgagni*

Derivation of the Tetanus Bacillus.—Molinari asserts after extensive research that the tetanus germs exist normally in the soil as assumed, but are found only in the superficial layers Oxygen and sunlight attenuate their virulence, but this is enhanced by passage through the intestines of animals (not man), which seem to be their chosen home and developing place The pathogenic germs are therefore derived from the dung of animals, consequently are most frequent in gardens, on the street, in barns, etc., wherever animal fecal dust can penetrate, including that from rabbits, poultry, cats, etc — *Munich Med Woch* , June 7

Physicians of Olden Times —It is said that a statute of Henry VII of England ordains that the healing art shall be limited to those persons who are profound, sad, and discreet, grandly learned and deeply studied in physic Upon the whole, this seems a formidable curriculum even for a medical student of the present day to face The lecturers on "profundity," we presume, would have about as much chance of imparting knowledge to their class as the lecturers on botany have in the present century As for the lecturer on "sadness," there would certainly be a difficulty in filling the post. Without awaking further inquiries into the adaptability of Henry VII's curriculum for the medical students of his time, we feel certain that our own is generally calculated to be in the end more useful to the community

Bertillonage to Receive Tardy Recognition in Germany —The Germans have been slower than others in adopting Bertillonage, as it is called, the system of personal recognition by a series of measurements and the notation and registration of any natural pigmentary or hairy peculiarities While the system is in use in France and very generally in Belgium, Switzerland, Russia and Italy, only isolated cities in Germany have adopted it Some recent work with it at the prison at Moabit, in Berlin, has been encouraging, and now it is announced that the police departments of most of the south German towns are about to adopt it, Munich, Nurnberg, Regensburg, Augsburg and Wurzburg having already made the necessary arrangements for its introduction —*Phila. Medical Journal*

Hematomyelia from Gunshot Wounds of the Spine —Cushing (*American Journal of Medical Sciences*, June), reports cases in which the missile lodged in the centrum of a vertebra without direct injury to the chord, but producing symptoms of hemilesion , both cases illustrate unusual features of a type of the Brown Sequard paralysis, the value of the X ray in locating the missile without operative interference, etc. There was a degeneration of the pyramidal tract, leaving paralysis in the lower extremities, and in one case involvement of ventral horn ganglia of the cervical enlargement has resulted in trophic changes with atrophy of some muscles He concludes that paralytic symptoms which follow injuries to the cervical region are generally due to hemorrhage in the substance of the cords and that this hemorrhage is a predilection to a site in the lower part of the cervical enlargement The hemorrhage, as a rule, occurs primarily on one side and leads to the Brown Sequard type of paralysis Hemorrhage also leads to cyst formations in many cases, producing symptoms quite like those of syringomyelia Prognosis is good when uncomplicated by sepsis

Master not Obliged to Furnish Medical Attendance —There are authorities, such as decisions in Illinois and Indiana, holding that where there is an extreme emergency, and an injury has been received by an employe of a corporation, it is within the authority of an agent of the employer, highest in authority at the time and place where the injury occurred, to bind the company by a contract to pay a physician for services rendered to the injured servant But the supreme court of Colorado says that it is cited to no case and finds none, where it is held to be the duty of an employer in the absence of contract, to furnish medical service and to send to a hospital a servant injured while in the service If by analogy to the cases just referred to, it can be said that such a duty ever exists independent of contract, which it reiterates is not the law, the court goes on to say it is only in a case of great emergency, and where it is imperative to save life or prevent great harm. The mere fact that an injury was inflicted requiring medical or surgical treatment, or that the locality where it was received was remote from the place where such treatment was accessible, the court declares in Denver & Rio Grande Railroad Company vs Iles, March 21, 1898, does not make it negligence on the part of the employer if the latter declines a request from the injured servant to be permitted to seek treatment, or does not obtain for the servant, or aid him in obtaining the same The general rule deduced is that in the absence of contract, a master **is not** obliged to furnish medical attendance to a servant who [illegible] in [illegible]rformance of his duty

The Physician of Napoleon Bonaparte —"Few students of Napoleonic history," says the *London Chronicle*, "are aware that Dr Antommarchi, who attended upon Napoleon I during his last illness at St Helena, is buried in the cemetery at Santiago de Cuba He had a brother living in that island, and after the Emperor's death proceeded thither and lived at Santiago, exercising his skill as an oculist gratuitously among the poor After his death in 1825 a public monument was erected to his memory in the local cemetery " This Francesco Antommarchi, like Napoleon, a Corsican, according to ' Chambers' Encyclopædia " did not publish "Les Derniers Moments de Napoleon" until 1826 He emigrated to America about 1836 and died at San Antonia in Cuba, April 3, 1838 He seemed possessed of a disputatious turn of mind and the last quoted authority somewhat sarcastically hints that his celebrity was based entirely upon his intimacy with the great emperor during exile, at whose death he became a beneficiary to the extent of about 100,000 francs

Professorship Not in Nature of an Office —People vs New York Post-Graduate Medical School and Hospital is the title of a case in which application was made for a writ of mandamus, based upon the notion that the position of a professor in the defendant college is in the nature of an office, and that it is in the province of a mandamus to reinduct a person into that office and keep him there But the first appellate division of the supreme court of New York pronounces this, May 6, 1898, an erroneous view, both of the professor's true position and of the office of the writ It says that the college is a private corporation, and its professors and instructors are simply professional men appointed to serve the institution in a particular manner They either hold contract or honorary relations with the college, but which was not clearly disclosed in this case If the former, the court says, a professor wrongfully removed can sue for his salary, or for any other emolument to which he is entitled If, however, the relation is honorary, its continuance or discontinuance must be mutually optional

Tinea Tonsurans —Sheffield, in the *New York Medical Journal* of May 14, presents a method by which he claims severe cases of ring worm of the scalp can be cured within three to six weeks He clips the hair close to the scalp and applies once a day for five successive days over the entire scalp, but more thickly over the affected spots, the following ointment

℞	Acidi carbol Olei petrolei	āā	65 0
	Tinct iodini Olei ricini	āā	110 0
	Olei rusci (German), q s ad		500 0

On the sixth day he wipes this off with a rag dipped in olive oil, again clips the hair, washes the scalp thoroughly but gently with green soap and a soft nail brush The next day he applies the mixture as thickly as before, and repeats the whole process regularly for three or four successive weeks, depending on the severity of the case, when it is found that new hair begins to grow and no trichophyton fungi can be found in the hair microscopically For a few days he then applies a 10 per cent sulphur ointment and then for about two weeks as follows

℞	Resorcini Acidi salicyl	āā	16 0
	Alcoholis		120 0
	Olei ricini, q s ad		500 0

Splenectomy —Vanverts concludes, from a study of 279 cases, including thirteen never before published, that the removal of the spleen is never in itself fatal The circulation is not materially affected when a sound spleen is removed, but very much enlarged organs which sometimes contain as much as liters of blood, naturally affect the circulation more He notes the fact that after ligature of the splenic vessels there is occasionally a sudden violent hemorrhage through the vessels of the wound After removal of the spleen the red corpuscles and hemoglobin decrease and the white corpuscles increase in number, but these alterations are of varying intensity and duration, from a few days to months The mortality in 242 cases was 102, or 41 7 per cent, splenectomy on account of injuries, 18 with 10 deaths, abscess, 4 with 1 death, cysts, 18 with 3 deaths, hypertrophy from leukemia, 29 with 26 deaths, from malaria, 79 with 23 deaths, from other causes, 94 with 38 deaths Vanverts' thesis is a comprehensive and valuable review of the subject, according to the *Cbl f Chir* of June 11 Henricius describes in the same issue a fibrosarcoma that weighed 3500 grams, starting in the capsule of the spleen, the first of the kind on record Splenectomy was not performed. The tumor recurred even after a second extirpation, terminating fatally

Treatment of Leprosy in the Fiji Islands —Prof L Lewin has been investigating the peculiar properties of the tree with which the Fiji islanders cure leprosy, according to the accounts of the missionaries He recommends further research in regard to what may prove a valuable acquisition to our therapeutics, administered in a less barbarous fashion The person affected with leprosy is placed in a small hut and rubbed down with the fresh leaves of the *excoecaria agallocha*, or poison milk tree His body is then covered with the leaves, his hands and feet tied and he is dragged to a small fire made of boughs of the tree, his head in the midst of the heavy black smoke, about fifteen inches from the floor The friends then retire and close the door, unmoved by the cries and appeals of the victim, who is left in this smudge for several hours, when he is removed and the skin scraped, and scratched in various places deep enough to draw blood, when he is left to rest Some die, but those that survive are cured of the leprosy The essential points are the heat, the long continued action of the milky sap and its melted products, and possibly the scarifications The tree is known throughout the Pacific as very poisonous, causing blindness if any of the sap gets into the eyes One or two drops will purge like croton oil (*Deutsche Med Woch*, May 26) The *Cronica Méd de Filipinas* mentions that the natives dip strands of cotton in the sap and dry them, soaking a strand in a glass of water, which they drink when a powerful purge is desired

Medical Examination of Plaintiff as New Question in Kentucky —The question whether a plaintiff in an action for damages for permanent injuries to his person may be required to submit to medical examination has, as readers of the JOURNAL know, received considerable attention in some of the states But the court of appeals of Kentucky says, in Belt Electric Line Company vs Allen, Jan 11, 1898, that it does not appear to have heretofore arisen in that state And while the decisions are not entirely uniform on the subject, it thinks that the weight of authority, which it seems disposed to follow, is that such physical examination may be demanded in cases where discovery of the truth will more likely result with, than without the examination, and the ends of justice be thereby better subserved The conclusions which the various courts and some of the text writers have reached, it takes pains to summarize as these 1, that trial courts have the power to order surgical examination by experts of the person of a plaintiff who is seeking to recover for personal injury, 2, that the defendant has no absolute right to have an order made to that end, but that a motion therefor is addressed to the sound discretion of the court, 3, that the exercise of that discretion will be reviewed on appeal and corrected in case of abuse, 4, that the examination should be ordered and had under the direction and control of the court whenever it fairly appears that the ends of justice require the disclosure or more certain ascertainment of facts which can only be brought to light or fully elucidated by such an examination, and that the examination may be made without danger to the plaintiff's life or health, and without the infliction of serious pain, 5, that the refusal of a motion, when the circumstances present a reasonably clear case for examination under the rules stated, is such an abuse of the discretion lodged in the trial court as will demand a reversal of a judgment in the plaintiff's favor

The Question of Non bacterial Immunity has been neglected, and yet possibly the solution of many problems may be bound up in it Why are frogs unaffected by snake poison? why is digitalis harmless for rabbits, atropin and cicuta for goats? As a contribution to the question Prof A Horvath of Kasan has been investigating, and confirms the peculiar immunity of the hedgehog to cantharides He publishes a number of tests in which freshly captured hedgehogs were fed with the fresh cantharides, which were greedily eaten without the slightest disturbance except a slight, transient loss of weight, possibly to be ascribed to the confinement Sometimes as much as 120 flies or 30 grams were taken at a time, and the animals disposed of enough cantharides during the tests to have exterminated a regiment of soldiers, without being injuriously affected in any way The flies were found in the dejecta in minute fragments (*Deutsche Med Woch*, June 26) This peculiar immunity is confirmed by Professor Lewin, who also states that the animal resists the action of opium, hydrocyanic acid and alcohol very much longer than others before showing the effects of intoxication But it succumbs to large amounts of cantharidin administered subcutaneously or per os, and cantharidin produces an inflammatory reaction in the skin, as in other animals He also states that neither the blood nor the serum of cantharidinized hedgehogs protects other animals against the poison, which recalls the relative immunity of birds to strychnin, and the impossibility of transferring this immunity by injecting other animals with their serum He considers it probable that the hedgehog's tissues merely possess a higher coefficient of resisting power than others

Against Experimenting with Instruments —The supreme court of Wisconsin has heretofore held that, in an action for personal injuries, the court may, in a proper case, at the trial, direct the plaintiff to submit to a personal examination by physicians on behalf of the defendant. But it holds, in the case of O'Brien vs the city of LaCrosse, May 3, 1898, that it was not only not an abuse of discretion to refuse, but would have been an abuse of discretion to force the plaintiff to submit to an experiment with instruments under the circumstances This was an action brought to recover damages for a personal injury sustained by reason of a plank in an alleged defective sidewalk flying up and striking the plaintiff across the abdomen, and throwing her down and permanently injuring her bladder, or muscles connected with her bladder After submitting to one examination, by the defendant's physicians, which was full and complete, except that the plaintiff, under the advice of her physicians, refused to permit the introduction of a catheter into her bladder, for the reason that it would endanger her health, it was insisted that the court should compel her to submit to a further examination by physicians on the part of the defendant, to ascertain the exact nature of her injuries, and how long they had existed, which the trial court refused to do, and the supreme court upholds it in not doing, as above stated The supreme court says it seems that courts differ widely as to the absolute right to a personal examination, in the absence of statute, by physicians or experts of the opposite party Some courts deny the right altogether Some hold that an absolute right to such examination exists at common law Such differences of opinion, it suggests, may be accounted for in part by the difference in the circumstances under which such examinations were requested The better opinion, it thinks, makes the right, in the absence of statute, to rest in the sound discretion of the trial court

Yellow Journalism Rebuked —The following letter concerning the prurient proneness to criticise the Medical Department of the Army without due regard to the facts, is self explanatory This JOURNAL has been fair in the matter Its columns have been open, but it has excluded much carping criticism, but Wm Wood and Company's medical journal has lost no opportunity to hamper the Medical Department of the Army and cripple its usefulness by publishing "yellow" articles, while the gallant medical corps are fighting the enemy in the field. This is another unfortunate exhibition of that sort of "enterprise" which has made this publisher's organ such a notorious example of all that is worst in medical journalism It is peculiarly fitting that in the same article to which exception is taken by the Surgeon General, a fulsome compliment is handed a sanitary officer, whose official course has been repudiated by the principal sanitary organizations of this country

WAR DEPARTMENT, SURGEON GENERAL'S OFFICE,
WASHINGTON, D C, Aug 1, 1898

To the Editor of the Medical Record, New York, N Y —

SIR—It is a matter of great surprise to me that a leading medical journal should condemn the Medical Department of the Army, without a hearing, upon the reports of newspaper correspondents I regret that the pressure of official duties makes it impossible for me at present to make a full reply to these strictures I will, however, take time to state a few facts

The number of medical officers allowed by law is inadequate in times of peace The total number allowed is one hundred and ninety two (192) There are at present thirteen (13) vacancies The administration of the Surgeon General's Office and Army Medical Museum requires six (6) Eleven (11) are on duty at medical supply depots and as chief surgeons of military departments One (1) is at the Soldiers' Home, fifty six (56) at general hospitals, on hospital ships and at garrisoned posts Four (4) have been disabled during the war by sickness Five (5) are on duty as chief surgeons of army corps This leaves ninety six (96) medical officers available for duty with the troops in the field Of these, thirty five have been appointed brigade surgeons of volunteers and are distributed among the various army corps

This deficiency in regular medical officers has made it necessary to employ nearly three hundred contract surgeons, and more are being employed every day Most of these doctors from civil life are doing good service and many of them are thoroughly well equipped physicians and surgeons with ample hospital experience, but it has been impossible to make a careful selection owing to the great pressure of business in the Surgeon General's Office, and the urgency has been so great that it has not been practicable to have Examining Boards to pass upon their qualifications

General Shafter's Army at Tampa was thoroughly well supplied with the necessary medicines, dressings, etc., for field service, but owing to insufficient transportation he left behind at Tampa his reserve medical supplies and Ambulance Corps Every one who has read the papers knows about the difficulties encountered in landing supplies at Siboney As is usual under such circumstances, the fighting men with their guns and the rations necessary for their subsistence were first landed and hurried to the front The *Relief*, loaded to her utmost capacity with medical supplies, arrived at Siboney four days after the fight at El Caney That she was not able to get there sooner was a great disappointment to me, but was no fault of the Medical Department I asked for a hospital ship in good time but there was unavoidable delay in securing a suitable vessel and in preparing her for service

It has not been the expectation of the Medical Department that every wounded man would immediately receive the attention of a surgeon No modern army makes provision for so large a number of medical officers as this would require But attached to our Army there is a Corps of noncombatants known as the Hospital Corps, which is the organized and authorized Red Cross Corps of the Army At the outbreak of the war we had 800 Hospital Corps men in service At present there are more than 4000 These men wear a brassard upon the left arm bearing the Red Cross of the Geneva Convention We have done our best to instruct them in giving first aid to the wounded, and in a majority of cases a first aid dressing properly applied by one of these men is all that is required All of the surgeons who have come from the front have testified to the remarkable results attained from the prompt app [illegible] of [illegible] c dressings by our Hospital Corps men a [illegible] themselves or their comrades The pro [illegible] ings contained in the first aid soldier, is, under existing regulations, a matter in which every enlisted man has special instruction. For some time past this instruction has been given first by our medical officers to the company officers, and by them to the enlisted men.

My position with reference to the inadvisability of sending female nurses to our camps of instruction, or with our armies in the field, has given great offense to some members of the Red Cross Society, and it is evident that the unjust attacks made upon me and upon the Medical Department of the Army result largely from the stand I have taken in this matter. I have gladly accepted the assistance offered us in the way of delicacies for the sick, etc., and we have now a large number of trained female nurses on duty at our general hospitals, where they are giving great satisfaction, but I see no reason to change my views with reference to the sending of female nurses with our troops in the field. They are an incumbrance to an army mobilized for active operations. This objection does not apply to the sending of immune female nurses for service in our yellow fever hospitals near Santiago, and I have already sent nearly one hundred.

The first aid dressing is to be put on at or near the firing line, and the men have usually to be transported to the field hospitals on litters. In this age of aseptic and conservative surgery comparatively little operating is required, and our regular force is ample to attend to this. Moreover, we have men selected for their experience and skill to decide whether operations are necessary and to perform them. I have never objected to the surgeons and ambulances of the Red Cross Society going to the field for the purpose of rendering any necessary assistance, but, in my opinion, they should be independent as regards transportation and should not call upon the Government for assistance in getting to the field of operations. The editor of the *Medical Record* knows that when he, in company with other prominent gentlemen from New York, called upon me in my office to offer the assistance of this organization, I said that an emergency might arise in which such assistance would be most welcome, and suggested the despatch of a hospital ship to the seat of active operations. If there has been any failure to get necessary supplies to Cuba it has been because of the difficulty of securing adequate transportation and of landing supplies through the surf, but we have been constantly importuned to transport Red Cross agents and female nurses to the front. I am informed that many of these so called nurses had never received any special training to fit them for the duties they were so eager to undertake. The National Red Cross Society should have been entirely independent of Government transportation if it expected to fulfil its proper function of affording aid to the wounded of both armies, in accordance with the terms of the Geneva Convention.

As regards the *Seneca*, I am informed by Major Torney, in charge of the Hospital Ship *Relief*, that he transferred forty two (42) wounded men, most of whom were entirely able to take care of themselves, from the *Relief* to the *Seneca*, because at that time it was expected that our troops would storm Santiago, and that a large number of wounded would be sent to the Hospital Ship for treatment. For the same reason a certain number of convalescents were sent from the shore hospital. Two acting assistant surgeons were sent on board with a supply of the most necessary medicines and dressings. If the ship was overcrowded or inadequately supplied with water, knives and forks, etc., the Medical Department is in no way responsible.

Finally, I would say that when the medical officers now at the front return home, I expect to have full information with reference to the efficiency of the medical service in the vicinity of Santiago, and in the meantime I hope that the profession at large will not be so ready to draw inferences unfavorable to the Medical Department of the Army on the basis of reports published in the daily papers, as the editor of the *Medical Record* has been. Very respectfully,

(Signed) GEO. M. STERNBERG,
Surgeon General, U. S. Army.

A Heavy Rise.—The *Medical Record* says it has every belief that "Surgeon General" W——n "will rise to his opportunities." No reason is given for this wild flight of imagination on the part of the *Record*, and the general judgment of the American Public Health Association, the AMERICAN MEDICAL ASSOCIATION, the Kentucky State Board of Health, as expressed in recent resolutions, is to the effect that a very considerable adipose dead weight will have to be removed before this picturesque person can either "rise" very high or fly very far. However, we shall watch this highly diverting and fugacious performance on the part of the *Record's* heavy weight with interest.

Hysteric Blackmail.—What was aptly described as "one of the perils of medical life," by the presiding magistrate at a London police court, is an illustration of the difficulties which sometimes beset the medical practitioner in the discharge of his duties. Mr. A., a surgeon, was brought to the court on a warrant, charged with committing a criminal assault on a Mrs. B. The solicitor who had been instructed to prosecute said that since the case had been put into his hands he had examined the witnesses for the prosecution and, in his judgment, the evidence did not support the charge. The statement of prosecutrix was not corroborated in important points. Mr. Jones, to whom Mr. A. acted as assistant, was called and he stated that he found the prosecutrix suffering from hysteria, and that Mr. A. had only done what was quite right in enforcing the administration of a soothing draught. The judge decided that Mr. A. was entirely and completely exonerated, stating that such cases frequently occurred, and expressing sympathy with any gentleman subjected to such a charge as this. A favorable ending to an unfounded charge of so serious a nature hardly compensates for the perils the medical man is exposed to in dealing with a certain class of patients, but it affords an example of the annoyance and risks which constitute one of "the dangers of medical life."

Surgical Experiences in the Late Frontier War of Northern India.—The *Indian Medical Record* gives the following interesting conclusions regarding the last important conflict in which the English have been engaged. "The surgical emergencies of the struggle were immense, and the demands on the operative skill of the Army Medical Staff were equally so. Capital operations of the severest type have been performed by the hundred on the battle field and in the movable camps, and so perfect has been the equipment, and so harmoniously have the medical units fitted into every emergency, that there has not been a single hitch during the whole campaign. The sick and wounded have been attended to admirably, and the results of the surgical work on the field have been brilliantly successful. Every case of amputation of limbs has proved a success. Not a single septic difficulty has been found in the whole history of the campaign. These facts speak volumes to the credit of our medical staff and to their hard working local staff, the Military Assistant Surgeons. We understand that the great French military medical expert, who was deputed to observe and to criticise the working of the British system of military medical equipment in India, and who has seen the whole scheme in active order on the frontier, has pronounced the most favorable opinions on our army medical organization. It is, he says, infinitely superior to anything else in the world. The opinion has been fully endorsed by a Japanese expert also. Unquestionably, the Army Medical Staff has fully vindicated its professional honor in such a manner as to silence the hostile and envious criticisms of the authorities at the War Office, who so grudgingly concede the pressing reforms of which this excellent service stands so much in need."

Caisson Disease at the Gouverneur Hospital, New York City.—The first symptoms of that disease resemble those of apoplexy. In one case a man came into the hospital with every symptom of having had an apoplectic stroke. He was unconscious, the pupil of his eyes were unequally distended, his respiration was stertorous. He remained unconscious for fifteen minutes and then recovered only partially. When he did recover there was anesthesia extending all through the lower half of his body. This is a symptom usually betokening spinal trouble. For short periods he became utterly unconscious. During the time he was conscious he seemed to be perfectly rational. I questioned him and found that he remembered nothing whatever that had happened since he had been attacked by the dis ease half an hour after he left the caisson After he died we had an autopsy, and about the only thing we gained from it was that there had been a hemorrhage into the heart muscles The cases vary in their symptomatology In one case a patient's right arm became absolutely rigid in such a position that the hand was bent back near the chin Meantime his left arm was working in spasmodic convulsions that could not be controlled The common symptom is that of intense pain at the ears Treatment here is to administer stimulants and to induce perspiration as copiously as may be In most cases this works very well On the Brooklyn side, where similar work is being done, the workmen undertake to treat one another by plunging the affected man into a hot bath It is their ignorant way of applying the same remedy that we do here, but the depressing effect of a hot bath is a danger for the men in the state in which victims of caisson disease are usually found to be when they are picked up The theory of the disease is that the air pressure in the caisson prevents the system from throwing off the injurious gases of the body, particularly the nitrogenous compound The pressure prevents the various organs of the body from discharging their functions toward one another, and congestion, with the symptoms of paralysis, results Engineer Washington A Roebling was obliged to give up his work on the Brooklyn Bridge for a long time, because of an attack of caisson disease and that his life was endangered by it Three hundred or more men are employed from time to time in the caissons at the foot of Delancy Street, and they have been twenty five or thirty applications for treatment at the hospital since the work began

Part of Physician's Account Outlawed —A physician sued to recover for services rendered during a term of years, some of the items of his account being more than six years old, for which reason it was contended that they were barred by the New York statute of limitations No one tried to make out that the account between the parties was a mutual, open, and current account, so that the earlier items would be carried along by the later, as is true of some classes of accounts, but the physician insisted that the account was continued by reason of certain payments made on it But, on that point, the fourth appellate division of the supreme court of New York decides against him, Burdick vs Hicks, May 7, 1898 When it was shown that the account had run for more than six years, the court says, the burden was upon the physician suing to show that the case was accepted from the statutory bar, which he failed satisfactorily to do The legal effect of a payment upon an account which has run for more than six years (the New York limit) is that of a new promise to pay an old debt, and the promise revives the old debt Yet such a promise should be made with a clear and explicit understanding of the true condition of the account, and, where a creditor relies upon such a payment to take an account out of the statute of limitations, it is incumbent upon him to show that the payment was made with a clear understanding on the part of the debtor that there was a balance still remaining unpaid after such payment The fatal weakness of this case was that the evidence afforded no ground for assuming any admission on the patient's part, or for inferring a new promise made by her to pay the balance of the debt, for the reason that there was nothing to show that, at any time when payments were made, she knew that there was a balance remaining unpaid, or that there still continued an obligation or debt in favor of the physician against her

Avan Surgery —Some interesting observations relating to the surgical treatment of wounds by birds were recently brought before a Genevan society by Professor Fabio The author quotes the case of the snipe, which he had often observed engaged in repairing damages With its beak and feathers it makes a very creditable dressing, applying plasters to the bleeding wounds, and even securing a broken limb by means of stout ligature On one occasion he killed a snipe which had on its chest a large dressing composed of down, taken from other parts of the body and securely fixed to the wound by the coagulated blood Twice he had brought home snipe with interwoven feathers strapped on to the side of fractures of one or other limb The most interesting example was that of a snipe, both of whose legs he had unfortunately broken by a misdirected shot He recovered the animal only on the following day, and he then found that the poor bird had contrived to apply dressings and a sort of splint to both limbs In carrying out this operation some feathers had become entangled around the beak, and not being able to use its claws to get rid of them, it was almost dead from hunger when discovered In a case recorded by M Magner, a snipe which was observed to fly away with a broken leg, was subsequently found to have forced the fragments into a parallel position, the upper fragments reaching to the knee, and secured them there by means of a strong band of feathers and moss intermingled The observers were particularly struck by the application of a ligature of a kind of flat leaved grass wound round the limb, of a spiral form, and fixed by means of a sort of glue

Louisville

OSTEOPATHY —A suit has just been filed against the State Board of Health, by Harry Nelson, a graduate of the "American School of Osteopathy of Kirksville, Mo ," asking that its members be restrained from pursuing him criminally, or setting on foot any criminal proceedings against him, or in any other manner interfering with or molesting him in his profession He also asks for a writ of mandamus compelling the State Board of Health to recognize and endorse the American College of Osteopathy "to the end that his diploma therefrom may entitle him to a certificate to practice his profession" The decision will be watched for with great interest, as it is *the final card played by this "school" to gain recognition* at the hands of the State Board of Health At the last session of the Legislature it was decided that the osteopaths must pass an examination before they be granted a certificate, and as just recorded in these columns only one woman presented herself upon call of the Secretary of the Board to pass the examination The plaintiff in this case states that the school and the system in which he practices is a perfected one, and has the recognition of law in a number of States He understands that the State Board is preparing to prosecute him under and by authority of the act on "Empiricism," which act he alleges is in violation of the bill of rights

FINES —The following physicians were fined in the ordinance court, $10 each, for not having paid their physician's license Drs M Thum, F F Berry and Miles Willett

LOUISVILLE MEDICAL COLLEGE.—The announcement of the reorganization of this college has just been made, as follows Dr C W Kelly, Dean and Professor of Anatomy and Clinical Medicine, Dr Geo M. Warner Secretary and Professor of Materia Medica and Diseases of Children, Dr H B Ritter, Professor of Obstetrics and Hygiene, Dr A M Cartledge, Professor of Gynecology and Abdominal Surgery, Dr William Cheatham, Professor of Ophthalmology, Otology and Laryngology, Dr Jno G Cecil, Professor of Theory and Practice of Medicine and Nervous Diseases, Dr W C Dugan, Professor of Surgery and Clinical Surgery, Dr Adoph Pfingst, Professor of Physiology and Histology, Dr Harris Kelly, Professor of Chemistry and Toxicology, Dr Fouche Samuels, Professor of Practice of Surgery and Operative Surgery

HEALTH OFFICERS' REPORT —There were 56 deaths for the past week, with 48 the corresponding week of last year Thirty-five of these were white and 21 colored

Philadelphia

PROF JOHN GUITERAS WILL REMAIN IN CUBA FOR THE P ENT —A false rumor to the effect teras to return to Philadelphia has been the recently made by Senor Dominguez, who is at present making his home at Dr Guitéras' residence in Philadelphia Senor Dominguez said that the report had been denied by Surgeon General Sternberg and by Dr Guitéras In a private letter received recently he reported the outbreak of yellow fever among the United States troops, but stated that the epidemic was very mild and that the troops of our country would not suffer much It is well known that as a diagnostician in cases of yellow fever Dr Guitéras has no superior, but as to executive work he has little taste or inclination for it

No Yellow Fever Found —On July 20, Governor Hastings had a conference with Dr Benjamin Lee, city health officer of Philadelphia and secretary of the State Board of Health, relative to precautionary measures in preventing the invasion of yellow fever into the State of Pennsylvania and especially through the port of Philadelphia It is known that boats from Cuba frequently land here, and the regions around the wharves would be fertile soil for the development of this scourge The health authorities have therefore been up and doing, and a house to-house inspection has been or will be made The work was divided into two sections, Medical Inspector Taylor with fifteen assistants looking after all the houses south of Market and east of Third, while Nuisance Inspector Kennedy and twenty assistants will attend to the section north of Market Street Dr J Howard Taylor recently said "We have determined to institute this investigation in order to prevent the disease getting into this city We do not expect it here, and the precaution is taken simply as the result of many years of experience in the regulation of health matters If a disease, no matter how easy it may be to control, gets the start of the authorities, it will reach such proportions that the ultimate result can not be conceived of, but if it is broken at the start we can so regulate it that it will not get beyond control That is the intention with regard to yellow fever I want to say most emphatically that we do not anticipate an outbreak, we do not even expect one case, but we will have this inspection and observe every precaution in order to insure immunity from the disease How we are to guard against fever victims coming in by train is difficult to determine, and if the disease does get into the city it will in all probability be by means of railroads" It is stated that should a contagious disease be found the house will be quarantined, thoroughly disinfected, and the patient sent immediately to the municipal hospital

Mortality Statistics —For the week ending July 23, there have been reported to the Bureau of Health 523 deaths, an increase of 30 over last week and of 48 over the same period of last year, 214 deaths were in children under five years of age The following were some of the causes Bright's disease, 8, cholera infantum, 86, cholera morbus, 7, tuberculosis, 46, inanition, 11, marasmus, 21, sunstroke, 10, teething, 2, uremia, 7, heart disease, 3, appendicitis, 3, peritonitis, 6, cancer, 14, dysentery, 4

Infectious Diseases —This week Diphtheria, 16 deaths and 46 cases, scarlet fever, 1 death and 25 cases, typhoid fever, 6 deaths and 70 cases Last week Diphtheria, 14 deaths, 73 cases, scarlet fever, 27 cases, typhoid fever, 5 deaths, 50 cases

Red Cross Ambulance.—Some time ago the Red Cross Society of this city appealed to the charitably disposed for funds necessary for an ambulance and equipments for the soldiers in Cuba The ladies of the North Broad Street Presbyterian Church became interested in the work and quickly raised the necessary amount ($275) besides a full set of harness Dr De Forrest Willard was appointed by the Red Cross to receive the ambulance on July 26

A Case of Medico Legal Interest —On July 4, Coligney Scheer, a lad 14 years of age, living at 2404 North Sixth Street, received a wound from the accidental discharge of a pistol A few days later lockjaw set in, from the effects of which the patient died. At the inquest it was learned that on June 19 the patient accidentally had a nail thrust into his foot, and the facts not being plain to the coroner as to which wound gave rise to tetanus, the case has been submitted to physicians for a correct decision

Cases of Beriberi —A few days ago seven foreign sailors with beriberi arrived from Probolingo, one of the Bermuda Isles, on the German bark *Steinbeck* All the patients were taken to the German Hospital, where at last accounts they were doing well

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CHANGE OF ADDRESS

Austin J H from 912 Walnut Street to Commerce Building, Kansas City, Mo
Bartholomew H B, from 1468 S Pearl Street to 104 Broadway, Denver Colo
Blake J D from 602 S Paca Street to 1014 W LaFayette Avenue, Baltimore, Md
Bell, S H, from Jackson Bldg to Ferguson Bldg Denver Colo
Babcock H L, from Findlay to 660 Stocking Avenue, Toledo Ohio
Fenelon, M. P, from Chicago Ill, to Ripon, Wis
Getzlaff, from St Peter, Ill, to Grand Haven Mich
Hodson F A, from Denver to Florence, Colo
Kindig F M, from 2139 Wabash Avenue to 100 E Twenty second Street, Chicago Ill
Klasen, J P, from 1462 Wabash to 1415 Michigan, Chicago Ill
McElfresh, C H, from 1417 Bremen Avenue to 4337 N Broadway St Louis, Mo
McAllister A M from 2045 Chestnut to 3626 Hamilton Philadelphia Pa
McKleveen, F G, *from 219 S Grant Avenue to 103 Byers Street, Denver,* Colo
Niblack E S, from 502 Lafayette Avenue to corner 7th and Elm, Terre Haute, Ind
Palmer G T, from Alton to Poplar Grove Ill
Palmer T D from 1705 Lawrence Street to Steele Block, Denver, Colo
Page J, F from New York, N Y to Paxton, Ill
Post M H, from St Louis, Mo, to The Moorlands Hotel, Gloucester Mass
Perkins, D S, from Cleveland Ohio, to Chase, Colo
Prather D J, from Oakland to Sacramento, Cal
Porter, I W from Mobile, Ala to Atlanta Ga Box 100
Peavey J L from 314 McPhee to 1253 Sherman Avenue, Denver Colo
Rogers O L from Milledgeville to Sandersville, Ga
Rimkel A E, from Jefferson to Chambers and Hopkins Streets, Milwaukee Wis
Rogers B W from Oakland, Cal, to 55 33d Street, Chicago Ill
Robertson, J J from Little Rock to Wynne, Ark
Sampson J H, from 6th and Felix to Corby Bldg St Joseph, Mo
Snitcher H C, from 801 14th Street to 907 17th Street Denver, Colo
Tombaugh, L H from Three Rivers Mich to Sheridan Ill
Tyler, J A from 423 E Long Street to 268 N Champion Avenue, Columbus, Ohio
Van Slyke W H from Calument to Opechee Mich
Willey, W B from Davenport to Bennett Iowa
Wood E M from Steele Block to Box 644, Denver Colo
York F A from 709 28th Street to 1109 E Alameda Avenue, Denver Colo

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LETTERS RECEIVED

American Therapeutic Co, New York, N Y Alden, W Roxbury, Mass Adams C B Vanceburg Ky Ashmun, G C Cleveland, Ohio

Bausch & Lomb Optical Co, Rochester N Y Bond R I, Hartshorne, I T, Berteling, J B South Bend, Ind Bell O G Norwich, N Y

Caldwell I J, Baltimore Md

Dewar J B Cedar Springs, Mich Dagney T F, Philadelphia, Pa Dupont R S Detroit, Mich

Evans, D W Dell Rapids S D Eggert Y C, Chicago, Ill, Ernst Mrs C, Toledo Ohio Elliott A V, Beresford S D Edes, Robert T, Jamaica Plain Mass Estep, T L, Stratford N C Elliott H G, (2) New York N Y, Etheridge J H Chicago Ill

Finley F W, Red Ash Ky Fordyce W E, Washington, Iowa, Fite, C C New York N Y

Gibbert, J B Dallas Texas Gould, George M, Philadelphia, Pa Garey J H Wilsey Kas

Hummel Adv Agency A. L New York N Y Herrick A B Santa Rosa Cal Hoagland, George A St Louis Mo Hodges, J Allison Richmond Va

Jackson Sanitarium Dansville N Y Johnston J C New York N Y Jordan L H, Mt Jackson Va Joslyn Henry Denver Colo

Kellogg, J H, Battle Creek, Mich Keller, J W, Hot Springs, Ark Kieffer A E St Louis Mo

Livingston G M Kalamazoo Mich Lucast T Milwaukee Wis Levy, R Denver Colo Lehn & Fink New York N Y Leffingwell, W E Watkins, N Y Lange Etta, Dayton, Ohio

Martin Franklin H Chicago Ill Matthews & Swartz, Pine Bluff Ark Metz A L New Orleans, La Marchand, Charles New York, N Y Massey G B Philadelphia, Pa MacLennan Donald Tonga Friendly Islands Polynesia Moore, C R Chicago, Ill Murphy, J B, Chicago, Ill. McKee Mrs N A Plymouth, Pa, Mulford Company H K, Philadelphia Pa Mooney F J Old Forge N Y

Parke Davis & Co Detroit, Mich Prince, David, New York N Y, Perkins, D S Cleveland Ohio Parker, E F, Charleston S C Paul Paquin Laboratories St Louis Mo

Rawlings J A El Paso Texas Reed & Carnrick New York N Y

Schameker J A Cleveland, Ohio Smith D G Freeburg Pa Smith, H S, Ortonville Mich Stell George S, Paris Texas Spalding W C New York N Y Sprague W B, Eureka Springs Ark Schneider A J Indianapolis Ind Smith, W O New Castle, Pa, Senn, Col N, New York N Y

Townsend W R New York N Y Tracy J L Toledo Ohio

University of Illinois Champaign Ill Unger A E, Dundee Mich

Wright W L, Brandon Texas Woody Samuel E. (2) Louisville Ky Wallace W B Lima Ind Willey W B Bennett, Iowa Wharton, J E Jacksonville Ill Wilde, Julia Cabot New York N Y Walter, W., Chicago Ill Woldert E A (2) Philadelphia, Pa Whelpley, H M St Louis Mo

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ORIGINAL ARTICLES

THE DIAGNOSIS AND SURGICAL TREATMENT OF MALIGNANT OBSTRUCTION OF THE PYLORUS

WITH REPORT OF THREE PYLORECTOMIES AND FOUR GASTRO-ENTEROSTOMIES

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association held at Denver Colo, June 7-10 1898

BY J W MAYO, M D
SURGEON TO ST MARY S HOSPITAL, ROCHESTER MINN

The stomach is undoubtedly the most common seat of carcinoma Hartley, in a recent paper on "The Etiology of Tumors" before the New York Surgical Society, says that not less than 34 97 per cent of all carcinomata are to be found in the stomach, and points out clearly the relation between the chronic irritation to which the stomach is subjected, and the disease

Gussenbauer and Winiwarter estimate that more than 60 per cent of stomach cancers are at the pylorus, and according to Bull, in more than one-half of these cases, the mechanical obstruction causes death before glandular infection takes place or the infiltration of neighboring structures is far advanced

Senn, in his monumental work on "Tumors," says that the histologic structure of cancer of this organ mimics the tubular glands, while the character of the tumor is determined by the relative amount of epithelial cells to the stroma This is well shown by the clinical history of the case If the cell structure is in excess, the growth is active, ulcerates early, and glandular infection occurs so quickly that the diagnosis will seldom be made in time to be of value In this class of cases, complete gastrectomy would be the only procedure indicated, as there will seldom be marked obstructive symptoms requiring gastro enterostomy for relief The successful case of Schlatter is hardly sufficient to give the operation a permanent position, nor can the curetting of the growth through a gastrotomy incision, as practiced by Bernays, be greatly commended as a palliative measure

That variety of carcinoma of the pylorus in which the stroma is in excess, quickly produces obstructive symptoms which lead to a diagnosis, and the nature of the tumor does not favor early glandular infection These growths are often annular in form, greatly resembling the carcinomatous stricture commonly met with in the colon Rarely the infiltration may involve the whole of the stomach, without special contraction of the pylorus, the walls being of enormous thickness and the cavity small, the latter a point of diagnostic importance, as the great thickness of the stomach wall resembles that due to pyloric obstruction with consequent dilatation Hektoen recently exhibited two marked specimens of general gastric cancer before the Chicago Medical Society The large fibrous stricture of the pylorus described by Greig Smith as probably non-malignant, greatly resembles general gastric carcinosis Sections showing malignancy are difficult to obtain in both instances Maylard, in speaking of this variety of obstruction, says that in the latter stages glandular infection takes place and the histologic structure of the adenopathy is typically carcinomatous

The enormous hypertrophy of the walls of the pylorus may form a distinct tumor, and these cases have usually been treated by gastro enterostomy particularly by Doyen

I have met with one well-marked example of this so called large fibrous stricture of the pylorus which had well defined limits If these cases are malignant, pylorectomy is indicated, this was the view I took of it and acted accordingly Clinical experience will soon demonstrate the question as to whether they are cancerous or not

Rokitansky long ago pointed out that extension of any form of stomach cancer to the duodenum seldom took place Sutton describes an adenoma as a rather infrequent tumor of the pylorus, which may be obstructive in its nature and possibly become malignant Sarcoma of this region is so rare as to be a pathologic curiosity, and need not be dwelt upon here

The diagnosis of obstruction of the pylorus and resulting dilatation of the stomach is not difficult Senn teaches us that when the fundus lies below the level of the umbilicus, there is pathologic dilatation unless gastroptosis is present Inspection of the abdomen in marked cases will often reveal the outlines of the stomach, and if it be distended, succussion will produce splashing sounds It is a simple expedient in the diagnosis of dilatation to pass a stomach tube and inflate the cavity with atmospheric air by means of a valve syringe, making its outlines evident, overdistension relieving itself around the tube

The normal stomach, as shown by Haslam, is contracted, and its walls in apposition or in close contact with ingesta The differential diagnosis as to the malignant or non malignant character of the obstruction is often difficult and occasionally impossible without incision of the abdominal walls The history is of the utmost importance A long history and a slow indefinite course in the early stages is against cancer, and in the stenosis due to scar contraction, an early history of frequent painful vomiting, especially after taking food, and the other classic symptoms of previous ulceration, are often brought out

In cancer the onset may be insidious, but is limited to a few weeks or months, rather than years In the latter stages the vomiting of great quantities of partly digested food at intervals is indicative of [illegible] tation but has little diff[illegible]s bet[illegible] nant and non-malig[illegible]

The presence of a

nificance in connection with the history In eleven cases of non-malignant obstruction, three had a well-marked tumor of the pylorus due to a thickened board-like scar, while in seven cases of cancer operated upon, in three no enlargement could be felt A tumor with a short history, accompanied by a cachexia, which while not peculiar to cancer, is of such frequent occurrence as to be clinically called "cancerous cachexia," is of great diagnostic importance

What shall be said as to the absence of free hydro chloric acid, or presence of lactic acid, in the differentiation? Dr Christopher Graham has made systematic examination of such cases as have been admitted to St Mary's Hospital for four years In cancer, the absence of free hydrochloric acid has been the rule, but has occasionally been absent in the late stages of non-malignant obstruction On the whole, the chemic tests have been disappointing The presence or absence of lactic acid varied in the same case at different tests, while the iodid test for absorption and salol test for motor power added little to knowledge more reliably furnished by clinical methods in common use The gastroscope and the gastrodiaphranoscope do not give encouraging results, even in the hands of their advocates The X ray adds little to the diagnosis, although, as shown by the cases of Meisenbach and others, it is of the greatest value if foreign bodies are contained in the stomach After all, of what great value is the preliminary exact diagnosis in cases of marked pyloric obstruction, as, under any circumstances, surgical intervention is necessary, and the earlier it is instituted the better will be the results, and as Haslam says, it may be impossible with the growth in hand to tell a hard carcinoma from a fibrous stricture, or a beginning cancerous degeneration of the scar of former ulceration Other things being equal, an early diagnostic incision, to be extended if feasible into therapeutic measures, should be the rule

In seven cases of malignant disease, which I have explored, nothing further was done In two of these cases great improvement followed, in one case lasting for a year Tait, long ago, called attention to the good effect upon intra-abdominal malignant disease the mere incision of the peritoneum occasionally had

Upon opening the abdomen the cancerous nature of the disease can usually be readily recognized by the enlarged tortorous vessels in the peritoneal covering, so different from the whitish scars of former ulceration The nature of the so called large fibrous stricture, upon which Loretta first performed his operation of digital divulsion is in doubt Whether the exploration shall end as such or be converted into the first step of a pylorectomy or of a gastro-enterostomy, will depend upon the extent and character of the disease, the adhesions to surrounding viscera, and the condition of the glands

The non-operative treatment consists of careful regulation of the diet and the use of bismuth, salol and gastro-intestinal antiseptics of this class to relieve the attendant catarrh The late Dr David Collins of Minnesota thought the internal administration of one grain of methyl blue, with three grains of powdered nutmeg after eating, was of great benefit Ochsner, in hopeless cases, practices the routine use of the stomach tube twice a day for the removal of the unabsorbed remains of ingesta to prevent irritation

There are but two operative procedures which can claim serious attention pylorectomy, a radical operation based on the hope of a cure, and gastro enterostomy, for palliative purpases

Pylorectomy is not a popular operation, its great immediate mortality, 40 to 70 per cent, and the few cases which have survived the three-year time limit have been discouraging, but if it is a fact that 50 per cent of pyloric obstruction cases die before systemic infection takes place, an early operation should give better results Bernay takes the view that the operation is useless unless we take out the entire stomach, seeming to class it with cancer of the breast or uterus, yet in cancer of the colon, which appears often as a stricture and produces an obstruction, mechanical in its nature, he would hardly hold the analogy complete and advise the removal of the entire large bowel

When the whole question is opened it would seem that the enormous mortality has really been the objection, and the only cases which have appeared to justify the risk, have passed beyond cure Improvements in technique will soon remove much of this fear Kocher has had seven recoveries out of nine cases, Pean eight recoveries out of twelve cases One cause of the great mortality in the so called Billroth method was imperfect union and resulting leakage at the suture angle, that is, at the point where the narrowed stomach was fitted to the duodenum

The performance of pylorectomy, and either side to end gastroduodenostomy or side to side gastrojejunostomy has remedied this weak point in the older technique and is now usually employed by the continental surgeons Of these two later methods, gastroduodenostomy is the operation of choice, as one of the constant dangers of gastrojejunostomy is the so called regurgitant vomiting, the bile and the pancreatic juices passing into the stomach through the fistulas opening, rather than along the intestinal tract I quote in full from a paper which I read before the Minnesota Academy of Medicine, Feb 2, 1898, and published in the *Medical Record* for June 11, 1898, a description of an operation for removing the pylorus and part of the stomach, which has been successfully employed by myself and my brother, Dr C H Mayo, on three occasions

These cases all recovered from the operation, and while now in good condition, sufficient time has not elapsed to speak of them as cured The method of pylorectomy we have followed has been so speedy and satisfactory that I would like to call your attention to it The ease with which any desired amount of stomach can be excised is especially noticeable, in one case the upper suture angle lying behind the left costal arch in close proximity to the cardiac orifice, passing obliquely downward and to the right more than six inches in length, making a sort of shovel nose to the amputated end

I make no claim to originality, although I know of no method of equal simplicity, and in the cases referred to, and also in a number of cadaver operations, the details were readily carried out The steps are as follows

1 A median incision above the umbilicus and, if needed, a cross-cut of the rectus

2 Double ligation and division of the necessary amount of gastrohepatic omentum, this allows the pylorus and lesser curvature to be delivered The fingers are now in the lesser cavity of the peritoneum and at once slip under the pylorus and act as a guide to the careful double ligation and division of the gastrocolic omentum attached to the malignant area

3 The diseased part is isolated by a piece of gauze drawn under it and a pair of forceps are caught from each side, separating the diseased from the healthy stomach and also preventing leakage from below With a knife make a circular cut completely around the healthy portion of the stomach to the mucous coat The muscular and peritoneal coats are stripped back and a few bleeding points caught with forceps The mucous coat is cut inch by inch and at once closed by a continuous catgut suture, this is cut short and the detached pylorus and tumor is covered and turned out of the way A second continuous catgut suture of the muscular coat rolls in the mucous, while outside of this, a good silk Lembert of the peritoneum and muscular coats protects and rolls in the two first rows of sutures

4 The end of the stomach is slipped to the right and the ends of the tied omentum are sutured to each other and to the suture line, not only making further protection, but also anchoring the stomach to the right and preventing undue traction upon the duodenum after it is fastened in place

5 The duodenum is cleanly amputated at a healthy point and buttoned with a Murphy button to the anterior lower wall of the stomach (at least three inches from the suture line, see Case 3)

We have made this operation once in forty-five minutes, once in one hour and five minutes, once in one hour and twenty-five minutes I mean by this, from the time the operation is commenced until the dressings are in place, and in each case from four to six and one half inches of the stomach have been excised

In the appendix to this paper will be found the detailed histories of these cases The operation herein described is a modification of the one published by Murphy in the London *Lancet* in 1895, and to him is due the credit of first clearly directing attention to the value of the combined operation

Gastro-enterostomy, or the operation of Wolfler, is a much more popular procedure than pylorectomy, although in performing it we frankly accept the inevitable This operation has been so thoroughly discussed recently by Willy Meyer in the *Annals of Surgery* for July, 1897, and by Dr Robert Weir in the *Medical Record* for April 16, 1898, that I will not take up much of your valuable time with it

At present there are but two methods of gastro-enterostomy which have a considerable following the suture operation and that with the Murphy button I recently had the privilege of witnessing the distinguished surgeon, Professor Senn, do the suture operation In his hands it seemed easy and was certainly rapid and satisfactory I have made ten gastro-enterostomies, four only for malignant disease, with one death All of my operations have been with the Murphy button, and I have had no cases of regurgitant vomiting nor of recontraction One non-malignant case now of over three years' standing

The collection of cases reported by Meyer and Weir show the great frequency and fatal character of the regurgitant vomit, and the importance of the subject is shown by the numerous methods of preventing its occurrence by Kocher, Doyen, Braun and others From a careful study of histories of the fatal cases in which this has happened, I believe it to be less common with the button than with the suture The method of gastrojejunostomy I have followed has been to grasp the jejunum at its origin and form a coil which shall be sufficiently free to attach to the anterior wall of the stomach without dragging, using no sutures whatever

As the stomach wall is very thick, it should be cut to the mucous coat before the puckering string for the button is put in, and the bite of the suture in the stomach wall should not be great, to prevent the button remaining too long in place It occasionally happens that the button will drop back into the stomach In the reported cases of this accident it has caused no harm and not infrequently it has been voided weeks or months after the patient has passed out of observation

I think too much importance has been attached to the question of whether the bowel shall be fixed to the anterior or posterior wall of the stomach, the results seems to be about the same in either case At the present time I believe the results, both immediate and remote, with the button are better than with the suture

A few words in regard to the preparation of the case for operation upon the stomach It has been my experience that the preliminary cleansing and emptying has been less perfect than would appear reasonable to expect, and at the operation a stomach apparently empty before will be found to contain a considerable amount of material, and as this viscus is elevated outside of the abdominal incision during the operation this fluid may gravitate into the dependent esophagus and be aspirated into the lungs, causing a fatal septic pneumonia Great care on the part of the anesthetizer is necessary in these cases to prevent this accident

Case 1 Cancer of the pylorus pylorectomy and gastroduodenostomy —B McD , female, aged 61 years, Irish, admitted to St. Mary's Hospital, Rochester, Minn , Sept 22, 1897, giving a history of an obscure stomach difficulty which had existed for several years past Within the previous six months the character of the distress had changed, was accompanied by vomiting at irregular intervals of large quantities of decomposed food There had been twenty five pounds loss of weight Physical examination —Patient somewhat emaciated, no tumor *could be discovered, stomach greatly dilated*, no free hydrochloric acid Operation Oct 1, 1897 A carcinomatous contraction of the pylorous was found no glandular enlargement Pylorectomy and gastroduodenostomy Button passed on the seventeenth day Discharged Nov 30, 1897

Case 2 Cancer of the pylorus, pylorectomy, partial gastrectomy and gastroduodenostomy —P D , female, aged 54 years, Irish, admitted to St Mary's Hospital, Rochester, Minn , Nov 8, 1897, with a history of gastric symptoms extending over a period of several months For the past two months she has vomited large quantities of partially digested or decomposing food, once or twice in twenty four hours and has grown weaker, with a loss of about fifty pounds in weight. Physical examination —Patient emaciated, face drawn and haggard in appearance, lungs and heart in good condition, urine contains one fourth of one per cent. of albumin, no casts A large quantity of decomposing food material was removed with the stomach tube, through the tube the stomach was distended with air and and its lower border shown to be three inches below the umbilicus An obscure tumor could be felt in the epigastrium, no free hydrocloric acid present in the stomach contents Operation Nov 25, 1897 A carcinomatous stricture of the pylorus was found, the infiltration extending along the lesser curvature to a point three inches from the cardiac orifice No apparent glandular enlargement Pylorectomy, partial gastrectomy (one third of the stomach) and gastroduodenostomy Button passed on the sixteenth day Discharged Dec. 23, 1897

Case 3 Cancer of the pylorus pylorectomy and gastroduodenostomy —M T , male, aged 42 years, German, admitted to St. Mary's Hospital Jan 3, 1898, with a history of gradually increasing stomach trouble during the past three years He has been unable to eat solid food for nine months, vomiting the greater part of the nourishment taken at irregular intervals, and within a month has had two attacks of apparent complete pyloric obstruction, each lasting three or four days and accompanied by great prostration Physical examination —Patient extremely emaciated, no tumor, stomach enormously dilated and partly full, the lower border apparently resting on the pelvic brim, no free hydrochloric acid Operation Jan 5, 1898 The so called large fibrous hypertrophy of the pylorus was found Obstruction almost complete Pylorectomy and gastroduodenostomy It was noted after the anastomosis was effected that the opening was rather too close to the suture line, but as the patient was in bad condition it was not corrected Button passed on the twenty first day Patient discharged Jan 31, 1898 Six weeks later, having up to that time gained thirty two pounds in weight, patient was suddenly seized with symptoms of acute pyloric obstruction His condition rapidly became worse, and in three weeks the man was reduced to a remarkable degree, the emaciation being beyond anything I have seen As he was unable to return to the hospital, I proceeded to his home at Kasson, Minn, where I found him confined to his bed and partly delirious from starvation With the help of my brother, Dr C H. Mayo and Drs Bedient and VanCleve of Kasson I made a gastrojejunostomy No attempt was made to ascertain the cause of the recent obstruction on account of his weak condition For two weeks following the patient remained in a precarious condition, from which time his recovery was rapid, and in two months he had gained forty two pounds and is now apparently well and of greater weight than ever before

Case 4 Cancer of the pylorus, gastro enterostomy —A A, male, aged 70 years, Norwegian, admitted to St Mary's Hospital Aug 2, 1894. Gastrojejunostomy for malignant pyloric obstruction Death on the fourteenth day from aspiration pneumonia Postmortem showed union complete, button in the stomach. Case reported in *Annals of Surgery* for 1895

Case 5 Cancer of the pylorus, gastro enterostomy —J K, male aged 58 years, German, admittted to St Mary's Hospital March 5, 1895 Gastrojejunostomy for malignant pyloric obstruction March 8, 1895 Button passed on the twentieth day Discharged April 5, 1895 Remained in good health for thirteen months, then died from rapid return of disease

Case 6 Cancer of the pylorus, gastro enterostomy —D D, male, aged 60 years, Welsh, admitted to St Mary's Hospital June 30, 1896 Gastrojejunostomy July 2, 1896, for obstructive cancer of the pylorus Button passed the eleventh day Discharged July 18, 1896 Lived for more than one year in comparative comfort before death from extension of the disease

Case 7 Cancer of the pylorus, gastro enterostomy —M T, male, aged 42 years, German, Feb 26, 1898 Gastrojejunostomy for acute pyloric obstruction six weeks after pylorectomy for malignant disease (see Case 3) Button not passed, so far as is known Patient now, three months after, has gained fifty two pounds in weight and is in fine condition

DISCUSSION

Dr J B **Murphy** of Chicago—I have been much pleased with the emphasis laid by the essayist upon the importance of early exploratory operation in these cases and consider this one of the most important points in the paper I would like to compliment the author upon the energetic manner with which he has pursued his ideas I have made a number of exploratory operations in order to determine the diagnosis If we are to have good results and permanent cures, which I believe we should have just as in cases of removal of the cervix for carcinoma, in the early stage, it is proper to make an early exploratory incision for the exposure and examination of the pylorus, a procedure involving a risk of less than 1 per cent When one considers the number of cases that occur every day in practice, we are justified in taking these chances, and the time will come when we are obligated to make an exploratory incision and not allow the large number of cases of malignant stenosis of the pylorus to go on to a fatal termination as we do now The method of drawing forward the pylorus is important and enables us to bring it immediately out of the abdomen, and facilitates the operation Gastro enterostomy has become a well recognized procedure and has much to recommend it. When a surgeon performs this operation he has rarely seen the case from the beginning, and when a medical man refers the case to the surgeon for gastro enterostomy the patient has usually been allowed to pass beyond the line of the preservation of his life and is sent to the surgeon for operation so that he may die easy If you let carcinoma of the cervix go on a certain time hysterectomy will be useless In the pylorus, however, a longer time usually elapses after operation before secondary infection occurs It makes the obligation to operate greater, because the symptoms exist for a more prolonged period and we should not be compelled to do gastro enterostomy at such late days

Dr **McArthur** of Chicago—We might reverse the method in making a gastro enterostomy prior to the removal of the carcinomatous or constricted pylorus If a passage were to be provided prior to the removal of the pylorus, the patient could better stand an operation later for the removal of the stomach

Dr **John B Hamilton** of Chicago—Three years ago a case came under my observation, when I acted from similar motives to those contained in Dr Mayo's suggestion, and the patient is still living She was at that time 30 years of age, had vomiting, was greatly emaciated, weighed only about ninety pounds and could retain nothing in the stomach Malignant disease of the pylorus was suspected, but no hemorrhage was present, an exploratory incision was made When I opened the abdomen I found no glandular involvment, but there was great enlargement of the duodenum at the pylorus I opened the stomach and passed my finger into the pylorus and examined it. I found that it yielded to the finger pressure and then inserted one, two and three fingers so as to forcibly dilate it, thus performing Loretta's operation Finding that I now had a free opening and believing the case to be non malignant I closed the stomach wound in the ordinary way The woman today weighs about one hundred and forty pounds

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INTESTINAL ANASTOMOSIS BY A NEW METHOD

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association held at Denver Colo, June 7-10, 1898

BY WILLIAM F METCALF, M D

DETROIT, MICH

Since Lembert, about 1825, asserted that the union of serous surfaces was to be aimed at in intestinal anastomosis, many methods of suturing have been introduced and many mechanical substances used to facilitate the suturing, but no appliance has yet been invented in the use of which the union should not be fortified by suture This being true, if device is to be used, it should possess the following qualifications 1, it should be rigid so as to hold the parts firmly in apposition, 2, it should, as soon as its function is performed, as soon as the suturing is done, pass quickly away to leave the lumen of the gut free, 3, it should be easy of introduction

In gastrectomies upon dogs I found it difficult to make a satisfactory union between the intestine and esophagus This led me to experiment with various appliances to facilitate suturing When I decided to use sugar I had cylinders of hard candy prepared around which I filed grooves This made them easily broken at the line of filing To overcome this objection I had molds prepared in which to run the sugar Many different sizes being needed, a consideration of expense led me to adopt the following method of preparation

Cylinders of sugar are prepared carefully so as to exclude the presence of air spaces These cylinders vary in size by the eighth of an inch, the smallest being one half inch in diameter By the aid of a file they are broken into pieces, one and one half inches long Around the center of each piece a groove is burned by a screwdriver one eighth of an inch wide The ends are rendered cone shaped by the same instrument and smoothed by moistened fingers They are then dried and wrapped in oiled paper to keep them from long exposure to the air This device enabled me to make the union of the intestine and esophagus in less time and more satisfactorily than was possible by either the bone or metal buttons, or by unaided suturing I then began its use in intestinal anastomoses with results that were satisfactory except for the fact that numerous adhesions would occur between the line of union and mesentery, liver, parietal peritoneum and other loops of intestine The first four specimens presented are samples of these adhesions Baum's recommendation to apply to the line of union absorbable tissue is obviously wrong I proved this to my own satisfaction, however, by careful experimentation with the application of gold beaters' skin and the fibrous coats of stomachs and bladders In all cases operated upon by various methods the autopsies showed one condition ever present, that the omentum became adherent to every accessible point of wounded tissue This observation led me to direct the efforts of nature by wrapping a fold of the omentum around the gut at the point of union This I found prevented adhesion in nearly every case, as the remaining specimens show I knew at the time that Dr Senn recommended the use of omental grafts and afterward learned that Dr Theodore A McGraw had protected his line of suture in the large intestine by covering it with a fold of omentum Leaving the blood supply of the omentum undisturbed I consider a valuable feature of the method

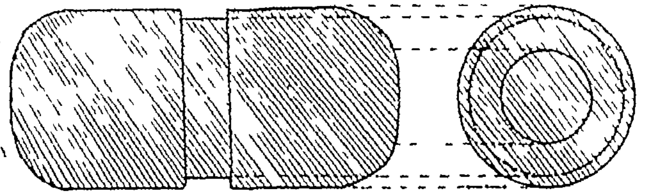

Figure 1

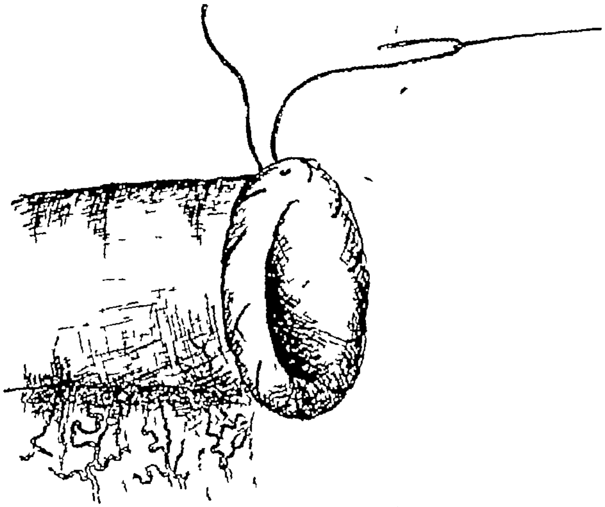

Figure 2 —A Catgut draw suture

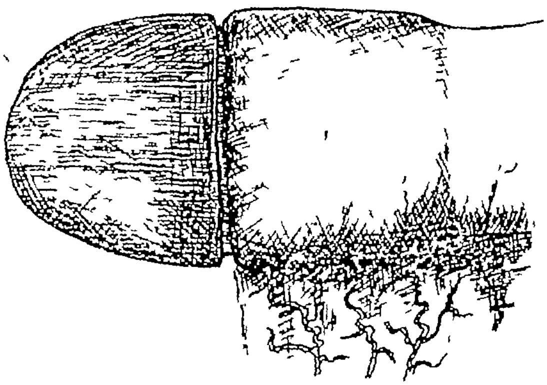

Figure 2 B —One end of button in place

I will now call your attention to the method of applying the sugar approximator (Fig 1) In end-to-end anastomosis, a spiral suture of carbolized catgut is passed as shown in A of Fig 2 to bring the edges of all the coats of the gut together to the bottom of the groove shown in B The size of the approximator should be such that its insertion will necessitate a slight stretching of the gut To do this without crushing the tissues, I have had made the forceps as shown in Fig 3 Their importance is enhanced by the fact that temporary spasmodic stricture occurs near the line of section Insertion of the other end into the gut is made in the same manner, the spiral suture tied, when the ends will appear in apposition as in Fig 4 The groove should be shallow, to permit the placing of the first line of suture as near the edge of the serous coat as possible I use fine braided silk The next suture is placed in the same manner and about one sixteenth of an inch from the first, the gut slipping easily over the cylinder to permit accurate co aptation Fig 5 represents a longitudinal section showing sutures tightened and approximator in place Fig 4, omitting the red line of suture, presents the appearance of the completed union

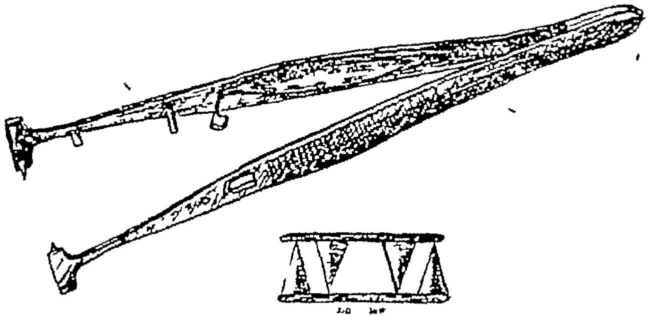

Figure 3 —Forceps

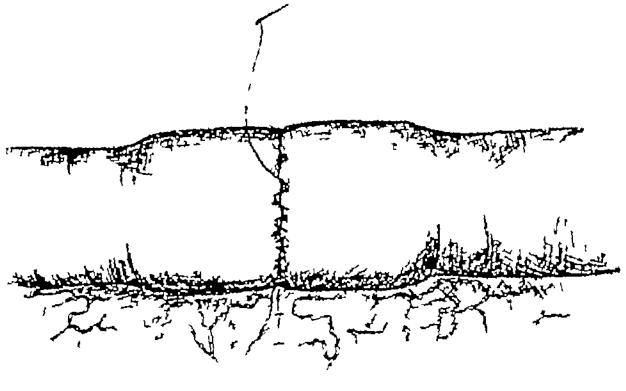

Figure 4 —Ends approximated, showing placing of first suture

The subsequent narrowing of the lumen of the gut depends upon the extent of union of the serous surfaces, the extent of this union governing the amount of fibrous tissue formed, to which the subsequent contraction is due In order to show you the extent of contraction in any case, it would be necessary to permit the animal to live several months and present a photograph of a microscopic section This, time would not permit me to do on [illegible] casi[illegible] men No 9 is one sho[illegible] te [illegible] that is, the union of [illegible] faces The operat[illegible] fold of omentum

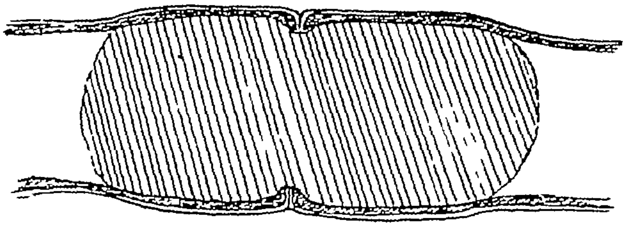

Figure 5

ing it by one stitch at the mesenteric border Lateral anastomosis may be done in substantially the same manner

The advantages of the method are 1, the approximator will quickly disappear and will therefore give no future anxiety, 2, with the approximator in place the mesentery may be accurately adjusted by rotating before suturing, 3, the ease and rapidity with which the union can be effected (Specimen 8 shows one removed from a dog upon which I operated without assistance), 4, the ease, rapidity and cheapness of manufacture of the approximator, 5, the spiral catgut stitch uniting the edges of the coats, tends to prevent accumulation of fluid and formation of abscess beneath the mucous coat, 6, a doctor of average surgical ability can perform the operation when emergency demands

DISCUSSION

Dr H H **GRANT** of Louisville—I have done several of these operation both anatomically and surgically, and have gotten along as well without artificial aid as with it The device suggested is a slight modification of the one we are familiar with, merely using a potato or turnip and preparing it just before the operation. The device facilitates the operation in the hands of those who have had little experience in the handling of the needle but the time occupied is not much less than a skilled operator would employ without much aid If we must use a mechanical device we should employ the Murphy button It is true that failure has occasionally resulted from imperfect approximation of the surfaces with the Murphy button, but this results largely from a want of familiarity with the mechanism of the button If the serous surfaces are brought accurately together, the necessity for the use of sutures will rarely occur The employment of these devices takes time and adds to the risk of hemorrhage There is very little to do in securing apposition of the surfaces other than that which nature will take care of, and I question whether it will be to the interest of the profession to substitute anything for the Murphy button which can usually be dispensed with

Dr **METCALF**, in closing I agree with the gentleman who has discussed my paper that it is an easy thing to do an intestinal anastomosis, but it is not easy at times to make the anastomoses that we are called upon to do My experience is that I can do the operation in one half the time that I used to be able to do it, and in such a way that there will be less serous surface to approximate The results will be more accurate and the subsequent contraction less"

THE ADVANTAGES OF A PERMANENT ABDOMINAL ANUS AND OF TOTAL CLOSURE OF THE SACRAL END OF THE RECTUM, IN OPERATIONS FOR CANCER OF THE RECTUM

Presented to the Section of Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Colo June 7 10, 1898

BY W W KEEN, M D,
PROF PRINCIPLES OF SURGERY AND OF CLINICAL SURGERY,
JEFFERSON MEDICAL COLLEGE,
PHILADELPHIA

In the *Therapeutic Gazette* for May, 1897, I published fifteen cases of amputation of the rectum by Kraske's method, to which I have since added two more, making seventeen in all Three of the patients died, giving a mortality of 17 07 per cent Of the fourteen cases that have recovered, six have now passed beyond the three-year limit and may be considered reasonably safe from recurrence Two of the men, in spite of the loss of the coccyx and part of the sacrum, ride bicycles with ease Besides these the paper included a number of other cases of cancer of the rectum, operated on by other methods

As a result of my experience in these cases, I have reached a definite conclusion as to what is the best course to pursue Evidently after the operation the bowel must continue to be emptied of its contents There are only three ways in which this can be done First, in those rather rare cases in which the sphincter can be preserved and the lower end of the bowel sutured to the upper, i e, a resection rather than an amputation of the rectum we restore the natural function of the bowel through the normal anus Second, if the anus and sphincter have had to be removed, we can suture the sacral end of the rectum at the end of the resected sacrum, pass it through the gluteal fibers and make an artificial sphincter, or rotate it to such an extent as to make a sort of supplementary sphincter I have not tried bringing the end of the rectum out through the fibers of the gluteus maximus muscle Both of the other methods I have tried, but neither has proved satisfactory Rotation of the bowel has been followed by infection in the folds of the rectum and not very satisfactory results as to retention of feces The sacral anus has not been satisfactory, first because it necessitates the patient's wearing for the remainder of his life, day and night, a napkin, partly on account of the constant escape of mucus, and partly on account of the want of control of the feces In addition to this, there has always followed a greater or less prolapse of the bowel, which in some cases even reached six inches No perineal napkin can be worn tight enough to produce pressure sufficient to prevent either of these annoyances

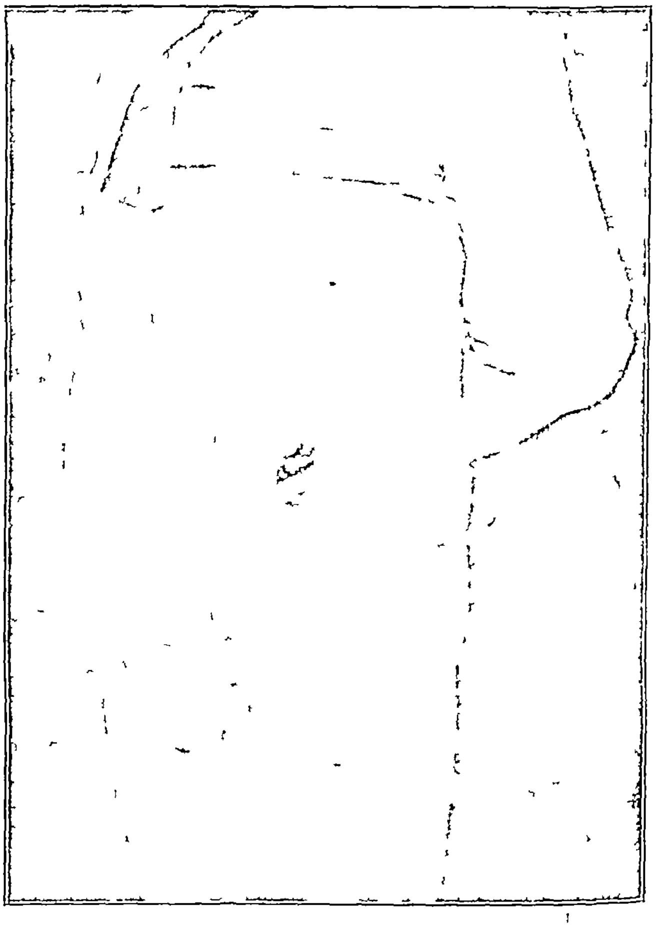

Figure 1 —The inguinal anus in Case 1

Besides the annoyance of wearing a napkin, the involuntary escape of mucus and feces and prolapse of the bowel, the sacral anus has another danger at the time of operation and afterward, namely, infection of the wound This infection is due partly to the fact that the bowel can not be suitably evacuated, nor can it be disinfected before the operation by means of the natural anus The cancer forms such an obstruction that neither can the feces escape downward, nor can satisfactory cleansing of the bowel be accomplished by means of enemata After the operation also the danger of infection from the escaping feces is a constant menace to the success of the operation I have therefore in my later operations always made a preliminary colostomy by Maydl's method At the end of about a week, I have excised all of the protruding portion of the bowel, leaving a permanent artificial anus The advantages of this are, first, that before the operation one can empty the upper bowel completely, and disinfect the lower bowel partly through the natural and partly through the artificial anus In the paper already alluded to, I have shown the impossibility of disinfecting or even of unloading the bowel prior to amputation of the rectum, even after days or weeks of effort Secondly, an abdominal artificial anus is very much more under control, and can be cleansed very much better than a sacral anus One can wear a belt or girdle as tight as is necessary, both to prevent undue protrusion and to prevent the escape of the feces Figure 1 shows the result in one of my recent cases Prolapse is present to a slight degree, but does not annoy the patient He is a blacksmith and does his work perfectly well Most of the cases with such an artificial anus have the bowel emptied spontaneously, once, or more commonly twice, a day, and at almost as regular hours as by the normal rectum Of course when there is diarrhea no control over the evacuation remains, but as I have shown in my previous paper, by means of a suitable dressing, the contents of the colon, as they escape, are caught and are prevented from becoming a source of annoyance to the patient or those about him

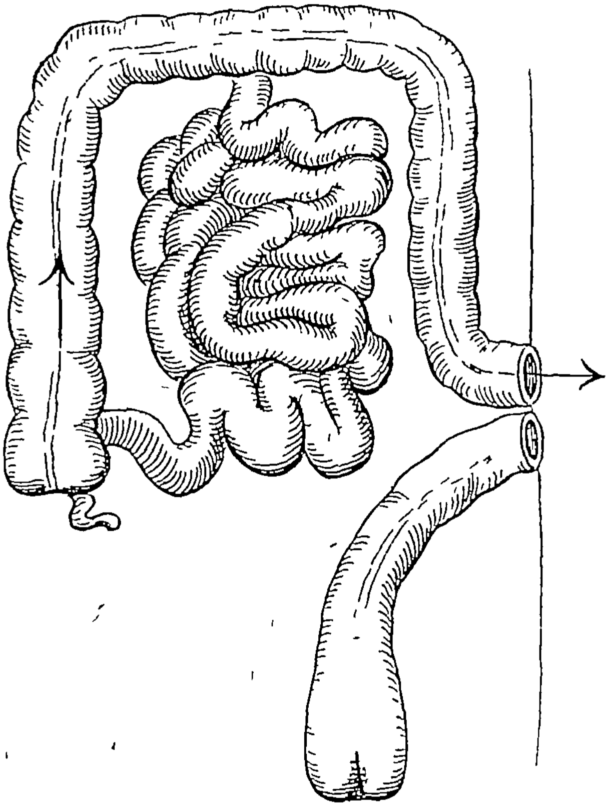

Figure 2 —Showing the preliminary colostomy and the complete closure of the sacral end of the rectum after amputation

In the last two cases upon which I have operated, I have taken a further step which I think is a distinct improvement in rectal surgery, namely after amputation of the rectum, I have completely closed the sacral end of the rectum, just as one closes the end of the intestine before making a lateral anastomosis (Figure 2) The first advantage of this is that if the closure is a success, neither fecal matter nor infected mucus can reach the wound, and we are much more likely to obtain primary union, which greatly lessens the danger of life Secondly, as the perineal wound is entirely closed, no escape of either feces or mucus occurs after recovery and the patient is relieved of the necessity of wearing a napkin Thirdly, for the same reasons, we avoid any prolapse

I have carried out this plan in two cases I was not able to avoid infection, because in the first cases there was slight leakage, and in the second there was an unavoidable dead space left at the end of the sacrum, and a slight reactionary hemorrhage But both of these cases suffered far less from febrile reaction than I have seen after the more severe infection by ordinary methods, and both have made excellent recoveries The second case is too recent to express an opinion as to the functional results These, in the first case, could not be better Seven months have passed since this operation and his physician, Dr Bashore of Bachmansville, Pa , has recently written me that the patient is working hard at his trade as a blacksmith, and can shoe as many as six horses in a day When one remembers that in shoeing horses a blacksmith bends far over and almost constantly, one can see the great advantage that this man has in being free from the discharge and the prolapse of a sacral anus, and the [illegible] essit[illegible] wearing a napkin Figure 3 shows [illegible] n of [illegible] um

I wo[illegible] [illegible] with which [illegible]

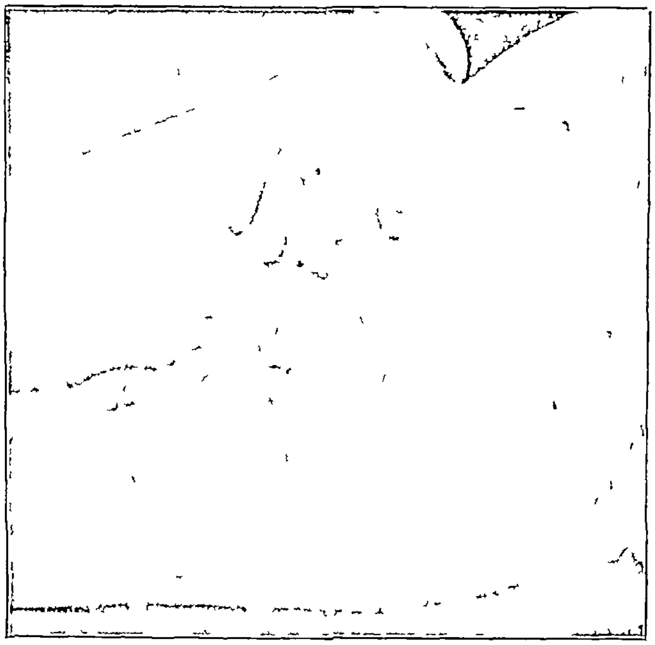

Figure 3 —Complete closure of the perineum without any sacral anus after amputation of the rectum

ined by Kelly's tube from the artificial anus as far as the sigmoid and the transverse colon In doubtful cases, as this was, the method will prove of great use in determining whether any operation should be done A brief account of these cases is as follows

Case 1 —Mr H H , age 55 Has had bloody passages from the rectum for three years, and has lost 29 pounds in weight, although still weighing 175 lbs A thick, nodular mass entirely surrounds the rectum, no adhesions Nov 3, 1897, preliminary colostomy, Maydl's method Bowel opened on second day, and entire protruding portion cut off flush with the abdominal wall at the end of a week Disinfection of the lower bowel by boric acid through the natural and the artificial anus Nov 17 resection of rectum and coccyx, and sacrum removed to 3rd sacral foramen, 13 cm (5 in) of the bowel amputated, without opening the peritoneum, but exposing the prostate, vesiculæ seminales, and a large part of posterior wall of bladder (Fig 4) Fifty ligatures Invagination and closure by Lembert sutures of lower end of rectum Closure of perineal wound On the fifth day, probably as a result of slight leakage, temperature 103 degrees Small amount of pus evacuated, when temperature immediately fell Out of bed on 18th day, and went home a few days after Dr Bashore writes "The artificial anus answers admirably and has no disadvantages whatever The mucus that collects in the rectum and lower colon is expelled upward In the patient's own words 'I feel as I formerly felt before stool, then, on bending forward, a sensation as if I had a stool, and the mucus is expelled on the bandage ' This happens about once in two days He is in splendid physical health and has resumed active work as a blacksmith "

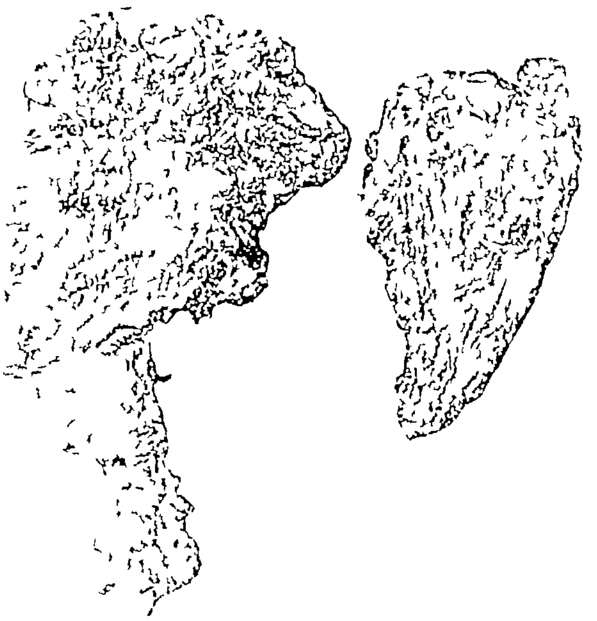

Figure 4 —Specimens removed in Case 1 Rectum coccyx and part of sacrum

Case 2 —E T , age 50 Pain in the rectum for a year and a half, with occasional blood Was admitted to the Jefferson Hospital Dec 20, 1897 A week before his admission I had examined the rectum in the out-patient department, by Kelly's proctoscopic tubes, and found a number of small polypi Three of these were twisted off and examined by Prof Coplin, who reported that they were tubulated adenomata, which in a patient of his age usually developed rapidly into cylindrical carcinomata Dec 22, 1897, I re examined the rectum with the patient in the knee chest position and found a larger number of even larger growths than were discovered at the first examination The larger ones were sessile As it was evident that it would not be possible completely to extirpate these growths, and in view of their probable development into carcinomata, I advised amputation of the rectum

Operation, March 19 1898 Colostomy by Maydl's method After packing the colon with iodoform gauze, I opened it immediately in the long axis and inserted Kelley's proctoscope, 22 mm in diameter, 9 cm downward and 8 cm upward from the colostomy wound I therefore was able to examine the rectum into the sigmoid flexure and into the transverse colon Had I found that the adenomata extended upward into the colon to any great distance, I should have closed the bowel and abandoned further operation As nothing abnormal was seen in either direction I decided later to amputate the rectum The wound in the colon was therefore closed with glover sutures temporarily and was permanently opened at the end of a week

Rectal operation, April 6, 1898 The ordinary Kraske operation was done, the sacrum being divided at the level of the third foramen The prostate urethra and bulb of the corpus spongiosum and a portion of the wall of the bladder were exposed Thirteen cm of the rectum were removed (Fig 5) A small rent was made in the peritoneum, but was immediately sewed up Immediately above the growth the rectum narrowed very sharply to a calibre scarcely larger than the fore finger Owing to the height and small size of the rectum, there was great difficulty in invaginating the lower end At the end of the sacrum it was not possible to draw the soft parts together, and in consequence a considerable dead space was left, which I packed with iodoform gauze A certain amount of reactionary hemorrhage took place that night, which required several sutures to be cut and a repacking with gauze The day after the operation his temperature was 101 8 but on the second day had fallen to 99 degrees From then until the tenth day it fluctuated between normal and 100 degrees, but after that was entirely normal The dead space left had slowly filled up, but was not quite cicatrized when he left the hospital, early in June Since then it has entirely closed and he is in excellent health

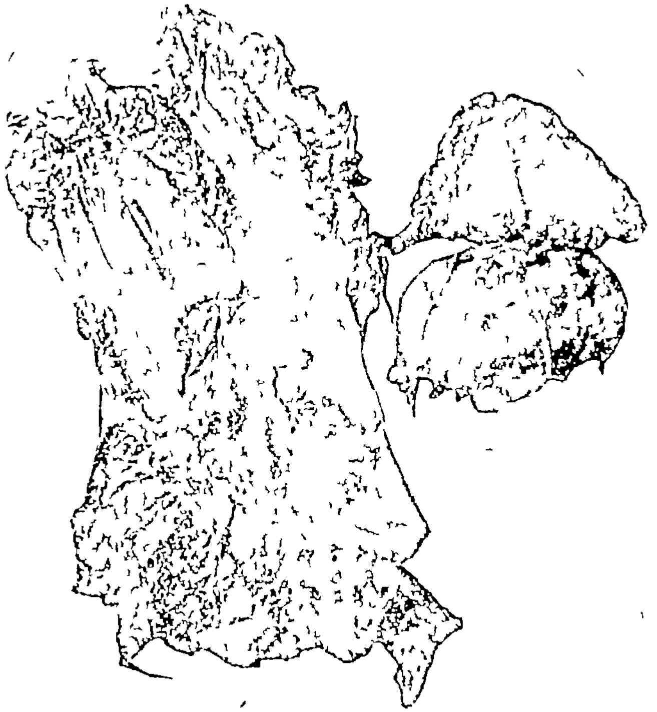

Figure 5 —Specimens removed in Case 2 Rectum and coccyx and part of sacrum removed in two pieces

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THE MEDICAL ASPECTS OF APPENDICITIS

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Colo June 7 10 1898

BY H A HARE, M D

PHILADELPHIA PA

In reading this paper on the medical aspects of appendicitis I am well aware that in view of the beliefs of some surgeons I am ordered to lead a hopeless cause I hope to show, however, that this is not the case, although it is necessary for us to arrive at a definite idea as to what this title means If it refers to the medical treatment in distinction to the surgical treatment and in the sense of the use of medicines in place of operative interference, then I am the wrong one to have asked to write on it, not that I believe that all cases are operative, but because I believe some are and some are not If the diagnosis of the appendicitis is at issue other lines of experience must be followed out, and if the pathologic aspect of the case is before us, still other thoughts must be expressed Taking up for consideration the diagnosis of appendicitis, I may first point out that he who asserts that diagnosis is always easy has not seen many cases and probably mistakes other maladies for this one, and that it is the experience of active practitioners that cases continually occur in which the very gravest doubt as to the character of the case must arise The extraordinary variation in the severity and locality of the pain as it occurs without palpation and with it, the difference in its character in various patients, and finally the extraordinary dislocations of the viscus anteriorly, posteriorly, above and below and behind the liver, make us think of the disease whenever a disturbance occurs in the abdomen, for cases have been recorded in which the appendix has been found almost anywhere and there is in the current number of the JOURNAL (June 4) an instance recorded in which the appendix was found under the left clavicle Nor are we to expect to find the morbid lesions alike in any two cases In some there is pus in excess, in others a small gangrenous tip with no pus or but little, in a third class a large indurated mass surrounding the appendix as a nut-shell surrounds its kernel, and it is an unfortunate fact that the more fulminating the inflammation, the more dangerous the condition and the fewer the physical signs Indeed, aside from pain and general systemic symptoms, no signs are to be found In the gangrenous type pain is often but a fleeting symptom and the speedy development of septic painless peritonitis misleads the physician, who can not elicit it even on pressure Nor are we to regard appendicitis as being always an acute process It is often subacute or chronic, insidious and provocative of aberrant symptoms which mask the real trouble Lately I have seen a lad of nine years who was seized while at the sea-shore with indefinite pain in the belly occurring in paroxysms He had fever, and the local physician gave him quinin and frankly said he knew not the cause of the fever His fever disappeared and he returned home only to go to bed in a few days with fever persistently remaining about 104 degrees and no other symptoms Finally repeated examination revealed right iliac pain, referred to the epigastrium on deep pressure, and the diagnosis of appendicitis of a subacute variety was made Some days later he developed well-marked typhoid fever, the local appendicular signs disappearing under the local use of cold I believe that this patient had a typhoidal infection of the appendix Another case seen by me and afterward by Dr Keen is instructive

A man 43 years of age suffered from what was apparently a violent attack of appendicitis, in the summer of 1896 At that time he suffered from one attack of severe pain which he believed to be due to cholera morbus, and a few days later suffered from another attack of much less severe pain, with, however, a general sensation of illness which forced him to go to his bed An examination by his physician revealed the fact that he had a marked swelling in the right iliac region, which was not only to be felt but which could be readily seen From that time until the first of March, 1898, he was entirely free from any symptoms in connection with his appendix, the swelling disappearing within a week after it was first noticed upon the application of counter-irritation, cold, and absolute rest in bed In March of this year he presented himself to me complaining of aching pains through the bones and through his entire body and a general feeling of illness The symptoms were more characteristic of influenza than of any other ailment, but no fever was present Two days later I was sent for to see him at his house I found him dressed and in an arm chair, feeling quite wretched, and with general diffused pains as before His temperature at this time was 102½ I had already examined the right iliac region when he was at my office, because of his history of appendicitis, and I now made another thorough examination with negative result His temperature continued to rise higher from day to day and he gradually developed, as his fever progressed more and more, pain in the right side of the abdomen until finally it hurt him to extend his leg or to raise his arm above his head There were, however, at no time any signs of induration or very great tenderness on pressure in the neighborhood of his appendix At this time he developed the rash of typhoid fever, his liver and spleen were found to be slightly enlarged, he had the curious odor of typhoid fever and presented a typical picture of enteric fever At the end of his second week of typhoid, the pain in the right iliac region having increased, daily examination gradually revealed slight swelling in the right flank, which finally extended from the border of the last rib to the anterior superior spine of the ilium, but the tenderness was very moderate He was seen in consultation with me on two occasions by a well known physician, the second occasion being due to the fact that I had insisted upon the family allowing me to call in a surgeon and, owing to their fear of the knife, they asked for a medical opinion as to the wisdom of calling in a surgeon This physician entirely agreed with me as to the necessity of interference Dr Keen, being called also agreed and made an incision in the neighborhood of McBurney's point, from which escaped a pint and a half of exceedingly fetid pus having the characteristic odor of typhoid stools, but containing no fecal matter A bacteriologic examination of this pus showed no typhoid bacilli, but the bacillus coli communis, and, floating free in the pus was a large mass which we thought, at first glance, to be a sloughed off appendix, but which Dr Keen asserted, upon dissection, was sloughed off omentum After the operation the patient, who of course was desperately ill, gradually progressed to a complete convalescence We have then a case of typhoid fever, complicated by a recurring appendicitis perhaps due to impaired nutrition of the patient, in which the symptoms of typhoid and appendicitis were so complicated, and so masked one another that a diagnosis was most difficult, and had the peritoneal cavity not been walled off by a wall of lymph there is no doubt that my patient would have died of septic peritonitis, complicating typhoid fever

There are other cases in which the typhoid symptoms are due to septic absorption from the appendicitis and the diagnosis is that of typhoid fever first and appendicitis afterward

As to the diagnostic symptoms of acute cases, rigidity is certainly of great importance Its presence always makes one call the surgeon at once for his opinion, and I do not call a surgeon who believes that every case should be operated on, rather one who will be broad enough to know that judgment and expediency are to be applied to the decision of every case I call a surgeon not as I would call a servant to do as I tell him, not as a [illegible] t [illegible] ot wh [illegible] but as a colleague who will present the surgical aspects to me as I will the medical ones to him He is to take part in my joys and sorrows and not to be weak and indecisive nor dictatorial and ambitious

I have recently published in the *Medical News* some interesting cases of appendicitis which show how one may be harassed by conflicting experiences In one case I implored, besought, pleaded and insisted that a young fellow with a history of nine attacks in six months should have an operation He had an immense mass of inflammatory material about his appendix He finally consented One of the most eminent surgeons living operated Stercoraceous vomiting speedily ensued with collapse and death I forced this man to an early death In another instance I advised delay, because after this experience I had lost my nerve, for it came to my hands a few days after Death met me again Another case had a sharp attack of pain with every classical sign of the disease A surgeon said operate The weather was excessively hot, the patient a feeble woman of 50 and I felt sure the operation would kill her I called a medical consultant who agreed with me No operation was done and the patient is now well and has had no attack since I could go on with such cases indefinitely and reach no clearer ideas as to the subject

As a matter of fact we can divide all cases into three sets those which undoubtedly should be operated on at once, those about which doubt exists and those that get well of moderate attacks and have no more One man injures his knee joint, it must be opened, another injures it and the question arises, shall we save it, a third gets well without the knife with good sensible external treatment There are no cases to be met with in practice which need identical routine treatment, for individuals differ, infections differ and circumstances differ When the profession recognizes that appendicitis is a disease in which medical and surgical opinions are always to be married and when dogmatic operators cease to combat dogmatic physicians then will these cases present the best statistics of recovery

Finally a word as to opium It will not cure the disease, nor will it limit it If it is used to excess it is harmful in more ways than one, but used with judgment it is of value to take the edge off the excessive pain and to support the system If it is used in such amounts as to remove the pain and produce sleep, it is abused The question is not opium or no opium, it is whether it is needed as a palliative of pain until the diagnosis is clear or the surgeon is ready

THE EARLY TREATMENT AND INDICATIONS FOR OPERATION IN APPENDICITIS

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Colo, June 7-10 1898

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Although appendicitis is more than ever regarded as a surgical disease, a majority of cases are first treated by medical men To one trying to follow the drift of opinion on its various phases as expressed by those best informed it is clear that there is yet a great lack of agreement on many important points In view of the importance of the history of any given attack a precise diagnosis is indispensable at the earliest possible time Physicians should therefore carefully examine every case, beginning with or attended by abdominal pain The diagnosis established, the next step will be either medical treatment or surgical operation The number of those who favor immediate operation, except in fulminant cases, is small, as compared with the advocates of an observation period of from twenty-four to thirty-six hours It is the general belief, in which the writer shares, that a considerable number of cases seen in the beginning of the first attack are either aborted by medical treatment or subside spontaneously by the end of twenty four hours, and of these a majority have no recurrence The advocates of immediate operation have to figure on a degree of danger, from operation or sequelæ, which equals, if it does not exceed, the slightly increased danger of the smaller number that will require operation at the end of twenty-four or thirty hours The advantage and the weight of opinion, if we may judge from the reports during the past year, are on the side of waiting this short period, except in fulminant cases In this class there is a general agreement in favor of immediate operation

In moderate cases the early medical treatment will be considered Absolute rest in bed, abstinence from food, hot or cold applications locally are agreed upon as of the first importance Hospital care, or that of a trained nurse, is almost as uniformly considered essential In directing the local applications, antiseptics should be used with a view to possible operation The pulse, temperature, degree of pain, general distress and appearance should be carefully noted Failure to relieve pain or to render it endurable by these means will suggest anodynes in some form With reference to the use of opium there is the greatest difference of opinion expressed by the best of physicians and surgeons Prof William E Quine, from whom I heard a clinical lecture on appendicitis fifteen years ago, recently expressed in his most impressive and explicit terms the same endorsement of the use of this drug when indicated, which characterized the lecture to which I have referred Herzog[1] says that those practitioners who use it have the satisfaction that their cases recover as often, if not oftener than those in which it is not used, and, if so, they probably remain more comfortable during the painful stages of the disease Many surgeons deplore its use because, as it is said, "it puts out some of the danger signals" Judging from a majority of opinions and from my own experience in a considerable number of cases, it is my firm belief that there are distinct advantages in its use in certain cases and stages, if used with proper precautions The influence on pulse and temperature of opiates in quantity just sufficient to promote the comfort of the patient should not confuse the observing physician, especially if the patient is under the observation of a competent nurse The amount required will further indicate the severity of symptoms Codeine hypodermically is probably the best form in which to administer anodyne, causing less gastric disturbance and interfering less with catharsis, should that be indicated at the same time Should vomiting be present and further stomach evacuation desired, warm water to facilitate emesis, either as a drink or by stomach tube, is indicated before the opiate is given. The coal tar products, owing to their greater interference with pulse and temperature and their less efficiency as pain killers, should not be used. It is scarcely believed by anyone now that opium shall be the mainstay or sheet anchor in the management of appendicitis, as was formerly taught, but a majority justify or recommend its use in a cautious manner. It relieves the shock of pain, is humane and palliative, and sometimes curative by relieving inflammatory spasm, quieting and favoring limitation of the inflamed area and resting the nervous system.

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[1] Deutsche Zeit Chirurgie 1897 p 214-230

The use of cathartics is the next mooted question in the medical treatment. McBurney says: "Cathartics are not indicated at the beginning of an attack as they tend to increase gastric, intestinal and general unrest." A majority of recently expressed opinions, however, favor prompt and free catharsis at the earliest possible time, provided the attack has not been attended by a profuse diarrhea. A majority of cases probably are preceded by constipation; many cases follow the ingestion of a generous meal, and many cases, approximately 25 per cent., are either cut short or spontaneously subside after thorough evacuation of the bowels. Stenosis of some part of the appendix plays an important part in the evolution of an attack and free serous depletion is indicated to eliminate the congestive element of the stenosis; with the safety valve free and fecal circulation re-established, the danger of explosion or perforation must be lessened, although infective inflammation may go on to the destruction of the appendix.

During the first twenty four hours in moderate cases in the first attack there is no material impairment of the appendix wall; there is, therefore, slight danger of perforation, while the hope of aborting the attack or securing a better condition for operation lies in early and free intestinal clearance. With this, as in other phases, the indications must be observed at the bedside and every case considered by itself. Opiates or cathartics should not be advised nor interdicted because the patient has *appendicitis*, but because of special indications.

As to the best means to catharsis, we may consult the taste or idiosyncrasy of the patient. Enemata will relieve the colon, small doses of mild chloride of mercury alternated with some acceptable saline will answer best for the intestinal tract generally. Epsom salts causes serous depletion with little peristalsis. In some cases where there is persistent vomiting, and medicines cannot be given by the stomach, I would suggest the use of hypodermic medication with the same purpose in view, viz., catharsis. This suggestion of hypodermic purgative administration is not new, but so far as I know it has not been applied to appendicitis, although recommended in general abdominal surgery as indicated. In 1893 a paper was read by Rohe and Wade before the Pan American Congress, detailing the results in one hundred injections of 2 per cent. solution of sulphate of magnesia in doses of 1.50 gr. to 4.0 gr. Injection was made in the arm. The results were positive in 97 per cent. of cases, average time for effects seven hours; forty two of sixty seven times produced watery evacuations. Inquiry as to other drugs by which the purgative action might be hastened developed the knowledge of the veterinary practice of hypodermic use of eserine, or what is known officinally as sulphate of physostigmine. This drug increases intestinal peristalsis very promptly and markedly, and intestinal secretion somewhat less. The writer has tried hypodermic tablets, prepared by Sharp & Dohme (one fiftieth gr.), and suggests as worthy of further trial a combination of sulphate of magnesia, as recommended by Rohe and Wade, with sulphate of physostigmine hypodermically as a means of prompt catharsis in stages where increased peristalsis may not be considered dangerous. Other indications for use of the combination are obvious and where oral administration is impossible or difficult.

In cases preceded by violent catarrhal diarrhea, no doubt the congestive element is a most important factor, whatever may have excited the local inflammation. Treatment directed to this condition is then indicated, rest, abstinence from food, warm fomentations as detailed. If evacuation has not been complete, a saline or castor oil will aid in its accomplishment, or the hypodermic method mentioned, after which a hypodermic of codeine will aid in quieting the intestinal tract. If evacuation has been complete, rest alone or with codeine may answer. With the subsidence of the catarrh of intestines the local appendicular trouble may disappear. As much in the way of treatment has probably been named as will occupy the first day. In this early period great pains should be taken to locate accurately the seat of trouble, as the future may develop urgent need of accurate location and tympany may obscure it. Should there be recession of symptoms at the end of twenty-four hours with return of patient to comfort and normal condition he will probably go on to recovery without abscess or other serious trouble. The means named, together with any sedative or symptomatic treatment that may be clearly indicated, extending over the first twenty four hours, will aid in cutting short many attacks if the writer can judge from his own experience. Should these fail or the attack not subside in the time named, or show marked tendency thereto, an operation should be done in every case, as a complete and safe procedure can at this time be confidently undertaken. Failure to act at this time subjects the patient to dangers that no one can estimate. This does not mean that operation is to be undertaken at any time after twenty four hours. Richardson's opinion that there is a time too late for safe early operation and too early for safe late operation, I believe to be sound, although that time cannot always be determined. Most fatal operated cases are either due to delay until this intermediate period or until general peritonitis has set in.

In fulminant cases, the earlier the operation is done the better, and no medical treatment except rest, fomentations and opiates to make life endurable until operation can be done are here advised. If the surgeon takes this view of the subject and is called within the first twenty four hours, in all cases the mortality will be reduced to a minimum, and the operative treatment will become established beyond a question in fulminant or progressive cases.

The trouble with the prevailing practice is that the surgeon is not called in time. In the later stages of the disease is where the indications for operation are not so clear, and unfortunately this later time is when the surgeon is often called. The uncertainty as to intra abdominal conditions in appendicitis is one of the best established facts in surgery. Dr. Murphy wisely enjoins those who may expect his services to call him early.

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Those who favor awaiting abscess formation should bear in mind that such occurrence is uncertain, and that general peritonitis may set in, that should abscess form, it may be deep-seated and central, and present insurmountable obstacles to drainage, further, that in event of abscess favorably located, the appendix may not always be removed with safety, and finally that hernia is likely to result after drainage cases

In the intermediate inflammatory stage, characterized by serious systemic disturbance, where the process is still limited but not circumscribed by safe adhesions, it is probably better to use opiates to quiet peristalsis and await the walling off process Here the patient is in imminent peril with or without operation, but the testimony of a limited experience and considerable observation convinces the writer that the least danger attends delay It is the large mortality attending operations in this stage (and in general peritonitis) that discredits surgical intervention It is in this stage that decision as to operation is most difficult The great systemic disturbance many times determines the operation when it should favor delay No other phase of the disease except approaching or present collapse of the diffuse suppurative period is so dreaded by the surgeon, and it would be a wonderful relief to him, as well as a great boon to the patient, if he could forestall that condition by early operation If an abscess has formed when the surgeon is called, and the more acute symptoms have subsided, operation is indicated except when such abscess is centrally and deeply placed In such cases, owing to the great difficulty of draining, it may be better to take the chance of spontaneous evacuation through safe channels By operation in the abscess period the weight of opinion is overwhelming in favor of leaving the appendix rather than to break up protective adhesions Should the appendix be present or be found within the cavity, it should, of course, be removed Should the patient suffer a recurrence from the nonremoval, which occasionally happens, the rule of early operation applicable to that condition will yet work out his salvation Who of us would not rather submit to the knife twice and recover, than have one *complete* operation and die?

In recurrent cases or those in which chronic inflammatory process is present, operation should be done In the second attack too early operation can not be done If the patient is seen after the second attack, interval operation is agreed upon as best, the safest time being two weeks or more after the attack In chronic cases we are in constant danger of immediate or precipitate perforation, which adds greatly to the danger of operation, and still more danger to delay, it is therefore safer to remove the appendix and forestall imminent danger

In considering the principles that should govern the operative treatment of appendicitis, we should not be influenced by the fact that their practice in the hands of inexperienced operators may result in a greater death rate than if left to nature Van Hook[3] expresses the belief that cases of acute perforative appendicitis will show a higher percentage of recoveries under medical treatment with incision of presenting abscess than when operated by surgeons who are gaining their first experience The inference that novices should not attempt appendicitis operations is obvious but that should not weaken the position of those who believe in early operation by competent surgeons Morris[4] well says, "The teaching of a correct surgical principle should not be abrogated on the ground that many improperly prepared men will try to carry it into effect"

Grieg Smith says in reference to the mooted questions arising in consideration of this subject, "It is impossible to be definite and wrong to be dogmatic" The surgeon can only decide in any given case at the bedside There is a considerable number of writers on the subject who advise operation as the safer plan in case of doubt Although American surgeons are charged with too great readiness to operate, I believe the encouragement in this direction has come from those with the largest experience and are therefore best able to estimate the advantages of early operation I believe the mortality can be reduced to less than 5 per cent if competent surgeons apply these principles

Columbus Memorial Building

PENETRATING WOUNDS OF THE POPLITEAL ARTERY

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association held at Denver, Colo, June 7 10 1898

BY GEORGE W MIEL,

DENVER

Though of small experience in dealing with penetrating wounds of the popliteal artery, the especial gravity of this accident itself, or because complicated with other injury, and vice versa, has impressed me with the desire to look well into the subject and giving my deduction, ask the criticism of this society

By carefully investigating a deep external wound in the vicinity of the popliteal artery, extended if need be by dissection, we exchange uncertainty for certainty Should such a wound communicate with the artery, we should remember a small puncture, even if occluded, may ulcerate and occasion secondary hemorrhage, which should at least put us on our guard An incised wound of more than an eighth of an inch requires ligation with complete division of the vessel between A penetrating laceration of even less extent calls for the same procedure A considerable laceration, and an uncomplicated gunshot division of the popliteal artery, requires double ligation away from the wound in a sound portion of the artery, with extirpation of the intervening wounded portion, and ligation of considerable branches given off A true puncture wound from without and communicating with the popliteal artery seldom occurs The artery is occasionally divided from within by pointed or edged exostosis *Procedure*—Intermitting digital or shot bag compression at the pubis, unless distension by thrombus or diffuse traumatic aneurism is so great as to threaten the collateral circulation, when, with provision against hemorrhage, dissection must be made to turn out clot and tie ends of artery

In dealing with complicated wounds of the popliteal artery we take up one of the most difficult problems the surgeon is required to solve When to amputate, when not to amputate, with his patient's life, deformity and impaired usefulness weighing in the balance against extra hazard—but life, limb and perhaps unimpaired usefulness While justified in taking chances to save limbs, we must well consider the possibility of greater loss through complication, and of life itself Our first consideration should be for life

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[3] Jour Am Med Association Feb 20 1[illegible]

[4] Jour Amer Med Association May 8 1898

A wounded vessel of great importance, a fractured bone, even badly comminuted as from gunshot injury, a perforated joint, a considerable separation or loss of integument, in themselves do not necessitate amputation In combination, however, they may call for it as the wisest procedure, or may necessitate it for the preservation of life, or as offering the better chance for life Gangrene supervening upon injury dividing the popliteal artery is in the large proportion of instances fatal The popliteal artery must perform its function or the collateral circulation must take up its work partially or wholly, besides its own, or the parts below perish

As complicated division of the popliteal artery, because of its protected position, is usually the result of extreme violence, which these structures quickly resent, the resulting inflammation has a most serious effect upon the collateral arterial supply to the leg The tissues already held nicely taut by the tough, resisting and closely attached enveloping deep fascia, leave only the popliteal space relaxed Tightened then by effusion without, and within the joint, inflammatory deposits, and perhaps thrombus, the collateral vessels, instead of accommodating themselves to the increased amount of work, are actually, I should think, in most instances unable to perform their accustomed work In our effort then to save a leg, it seems plain that our own wound in dealing with rupture of this artery, or the communicating wound of violence, should be never more than loosely closed, but preferably dealt with by nice grouping of the deep structures and neat tamponade, in some cases using, if thought best, provisional, or loose deep suture below the fascia latta and integumentary structures overlying The life of the leg depends upon relaxation of the enveloping covering, and avoidance as far as possible of harmful constricting pressure

Too often, unfortunately, when the popliteal artery or vein is ruptured, in our unsuccessful effort to save a leg, a life is lost Gangrene supervening is moist, and of the quickly spreading or fulminating type, and in vitiated subjects it may spread from the wound Demarkation is absent, and decomposing fluids pass readily into the general circulation Amputation then, a last resort, occurs at the worst possible time and must be done far above It is then at the time primary amputation can be practiced, that modern reliable, and properly classified statistics would be of invaluable service in this desperate emergency

In our present text books, so far as I have seen in a considerable search, statistics upon injuries invading the knee are grouped in a general way with injuries involving the great articulations, which is unfortunate and misleading The serious injuries involving the knee, and which raise the question of amputation, necessitate separate, definite, and full statistics The nearest approach to such compilation is available to us in the separate instances, and small collection of cases, of division or rupture of the popliteal artery, reported from year to year in the Annual of the Universal Medical Sciences in aggregate few, and by far the larger proportion are instances of ligation and various procedure for completely ruptured popliteal aneurysm

Our available statistics attending double ligation of the popliteal artery in uncomplicated cases would indicate at present a mortality of some ten per cent While each case of complicated perforation of the popliteal artery must be judged separately, something approaching definite action may be applied in accordance with carefully compiled statistics based upon the antiseptic system Primary major amputation, while always a grave emergency operation, other conditions being equal, differs in degree Amputation, of necessity, is accompanied with more shock than that which attends what might be termed amputation of seeming necessity, or expediency Considerable loss of blood naturally adds seriously to the issue of ligation or amputation, notwithstanding auto, mediate arterial, or saline transfusion

If then we can have available statistics of complicated penetrating injury—division or rupture—of the popliteal artery in their several combinations, with result of effort at saving the leg—"waiting"—in contrast to statistics of amputation, we can proceed more definitely in our patient's better interest And if it shall be shown that primary amputation offers unquestionably the better chance for life, the patient concurring, and other circumstances being equal that should be our procedure In the words of Connor, "Final judgment as to the necessity of amputation in any given case must be sustained by the latest surgical experience"

Today the telephone and better hospital facilities and appointments permit us to take greater chance than formerly Taking the chance, the patient must be under frequent scrutiny that at the first sign of approaching gangrene—cold leg and marked stasis, or erysipelas—we can, and should, resort to proper amputation above the knee

DISCUSSION

Dr B MERRILL RICKETTS of Cincinnati — This subject should receive more attention in the future I desire to refer to Dr Crile's paper in connection with this subject, as he has demonstrated that the common carotid artery may be obstructed by pressure from twelve to twenty four hours without injurious effects, and has shown that there is no danger in such obstructions The carotid has been clamped in a human being during an operation for a removal of a tumor of the neck Within the last ten days I have torn off the external iliac vein in removing a tumor from the iliac fossa, and no serious consequences have resulted after ligation I believe it impossible to suture or make anastomoses by any of the methods so far devised, but in future it looks as if we should be able to do something for penetrating the wounds of these vessels My brother had a case fourteen years ago where the deep profunda was shot off close to the femur, and extensive hemorrhage followed The leg was cold, and an amputation was performed at the hip joint, but the patient died forty eight hours later Today we would doubtless adopt other measures and be more energetic in trying to save the limb It might be better to divide the artery rather than sew it up

Dr OLIVER of Cincinnati—I recently had a case bearing upon this subject in a boy 12 years of age whose foot had been caught in the wheel of a carriage, producing a compound fracture of the femur at the epiphyseal line The lower end of the upper fragment projected through the popliteal space, and there was a large ragged wound corresponding to the point of exit of the femur When I saw the case three hours later, pulsation of the popliteal artery could be plainly felt in the wound The fracture was reduced by extension and pressure, and the foot appeared normal the next morning, but on the second morning symptoms of obstructed circulation were present, and on the ninth day amputation had to be performed In a dissection of the leg, after amputation, considerable effusion was present in the deep fascia, which was probably the cause of the obstruction to the collateral circulation and the resulting gangrene Two inches of the popliteal artery were found to have been destroyed, and I was very much impressed with the fact that the unyielding dense fascia had been responsible for the gangrene of the limb In future cases I shall open the deep fascia thoroughly, as I [illegible] not see [illegible] why we should not save these legs and convert the operation into a simple ligation of the popliteal artery

Dr TINKER of Philadelphia—Experimentally the descending aorta has been divided in an ass and the animal recovered perfectly When it was killed several months later, firm union was found to have taken place between the divided ends

Dr B MERRILL RICKETTS—As to the size of the artery, anastomosis seems to be more successful in the larger arteries, and the experimental work referred to by Dr Tinker would seem to prove this, the artery in the ass being very large

Dr MIEL, in closing—As to the temporary closure of the vessels this is especially desirable in dealing with wounds about the mouth, and if this can be successfully accomplished we shall have a much better method than in permanently ligating the common carotid for conditions about the throat and tonsils

Dr Oliver's case is one of the kind which prompted me to read this paper I had a case of a man in whom amputation of the foot had been performed, and although I believed good circulation was present, gangrene supervened and the leg had to be amputated, the man subsequently dying from septic infection

I remember another case of compound fracture of the knee where amputation had been deferred I knew nothing of the involvement of the popliteal artery in the case, but subsequently ascertained that a spurting of blood had been noticed at the time of the injury The brother of this patient objected to operation, and unfortunately very often in these cases these objections cannot be removed until it is too late to operate I believe that compression of the vessels had much to do with causing the gangrene

As to end to end anastomoses if they can be successfully accomplished, we are rid of a very formidable operation which has carried away many individuals

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ANEURYSM OF THE AORTIC ARCH

LIGATION OF RIGHT SUBCLAVIAN AND COMMON CAROTID ARTERIES

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association held at Denver Colo June 7-10 1898

BY B MERRILL RICKETTS, PH B , M D
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While any point throughout the arterial system may become aneurysmal, it is aneurysm of the aortic arch to which special attention will be given in this paper The pathology, which is fairly well understood, will not occupy much space, but give place for more thought upon the treatment, which has, from the time of the great masters — Antyllus (fourth century), Anel (1710) and John Hunter, baffled the skill of all Its successful treatment at the present time is practically *nil* in ways other than surgical Even this method has been of but little consequence until within the last few years, when by accident Christopher Heath (1865) discovered the beneficial results to be obtained from ligation of the right subclavian and common carotid arteries, supposedly for aneurysm of the innominate Death four years later revealed aneurysm of the arch and much new tissue within the sac Nine additional operations have been made since then by as many different operators, with most brilliant results in the seven which survived the operation, and had not the mortality before the days of asepsis been so great, many more cases would no doubt have been subjected to such surgical measures Even at this late date, the ligation of these arteries, for this condition, does not receive its merited attention

Thus it is, perhaps, that the obstruction of these vessels for many conditions have been made fewer, but now that more perfect methods have been inaugurated—methods which enable the work to be done with slight if any, mortality—much more will be accomplished in this direction There is no form of aneurysm, except those intracranial, which has heretofore offered so little encouragement in the way of treatment

The methods of Tueffnell and Schott have been followed by favorable results in a few cases In point of fact, recumbency and diet are to be advised in all cases of aneurysm, as are occasionally baths and graduated exercises These, in conjunction with mercury and the iodids, should, as a rule, be resorted to in all forms of aneurysm, especially of the arch and innominati, before surgical intervention They should also be applied after the ligation of aneurysmal vessels, especially are they beneficial in those of *syphilitic origin*

The interesting demonstrations of Draste (1895) upon the dog, by injecting a solution of gelatin into the veins, have warranted its introduction into the first portion of the arch in man, where aneurysm of the arch existed, with, however, negative results Macewen's method of introducing, first needles, and then wire, into the sac, both with and without galvanism, has proven itself of great value, the most marked beneficial results having been obtained by Hare some fourteen weeks ago He introduced ten feet of gold wire into an aortic aneurysm through a hollow needle, to which galvanism was applied, gradually increasing from three to seventy milliamperes Indeed, this seems to be a most rational method of dealing with a limited number of these cases, and while the object of any method is to produce coagulum, it would seem that fragments of it produced in this way (especially if the opening into the main vessel should be large) would be more likely to become detached and enter the general circulatory system

At present, there is absolutely no means of determining the character of the opening into the sac The method would seem to be applicable in those cases with one or more small openings Even then the wire might pass from the sac into the artery, thus it is that this method is attended with great risk and mortality It would seem to be the extremely large opening that would preclude the possibility of beneficial results from any method

While the autopsy in Dr Hill's case three months after ligation (Cincinnati *Lancet and Clinic*, March 19, 1898) showed it to be one of the most unfavorable for either ligation or the introduction of wire, large quantities of fibrous tissue had been deposited within the sac since operation He was greatly benefited, so much so that he was enabled to return to his duties —those of a policeman—after a few weeks He died suddenly from rupture of the right auricle, while sitting at the table eating breakfast About twelve pounds had been added to his weight, and he was comparatively comfortable

It may be argued that the ligation of the subclavian and common carotid arteries in this case superinduced the heart rupture Had the left auricle subsequently ruptured, one might indulge in such belief Of the 412 recorded ruptures of the heart (Hill) from all causes, but one of the right auricle occurred It must therefore be presumed to be an exceedingly rare condition, and one not due to obstructing these important vessels Diagnosis of aneurysm of the arch is not certain, as it may exist without detection of *murmur or other symptoms* If discovered, its character must be absolutely unknown except by autopsy This, therefore, must necessarily make more uncertain the proper course to adopt, and much speculation must ensue The following classification might not be amiss 1, those in which the right subclavian and common carotid arteries should be ligated, 2, those into which wire should be introduced, 3, those in which nothing should be done

It may be that those in the first and second would be equally benefited by either procedure That each has been beneficial to a very high degree there can be no question, in fact, greater benefit has been obtained by these two methods than any other

The modus operandi of the second is more easily understood than that of the first, even though the first has been followed by more permanent and universal results But the great underlying principle upon which rests the method of ligating the subclavian and common carotid arteries does not seem to have been discovered until the time of Wardrop He it was who demonstrated that less resistance was necessary to produce consolidation of the contents of the sac than was formerly thought to be It is, therefore, to be supposed that the obstruction of the innominate, or its branches, would be sufficient to more or less retard the rate of blood-flow through the sac This retardation would necessarily seem to correspond with the opening into the sac, hence the amount of lymph deposit would be influenced Now, it is not necessary to close a vessel that complete consolidation of an aneurysmal tumor may ensue So it is that lymph may be deposited within the sac, first in the depression of its wall, and especially at the opening of the innominate

The case herein reported was first referred by Dr H A Beeson of Leesburg, Ohio, in the spring of 1897 Male, white, age, 40, family history negative He complained of pain in right infra-clavicular region, extending beyond sternum, and in right arm, especially exaggerated on movement of arm, incapacitating him for his work—that of a blacksmith and wagonmaker On examination, a swelling was found extending from middle third of right clavicle, slightly beyond median line, and extending over two or three intercostal spaces No bruit could be found at this time On questioning him, found that twenty-two years previous he had a suspicious sore upon the genitals The diagnosis of aortic aneurysm due to syphilis was made, and the patient put on anti-syphilitic treatment The few reports from him after were that he was improving, being at the end of three months able to resume his work On the 15th of February last, Dr Beeson again brought the patient to me The pain complained of at his previous visit was even now not so severe, but he was becoming more and more short of breath, and was gradually losing flesh Examination again showed swelling, slightly greater than before, and now a very decided bruit was found in medial line near junction of second and third portions of sternum The bruit was especially distinct on the introduction of stethoscope into patient's mouth The pulse was about eighty—full and strong It is to be regretted that the sphygmograph was not used An operation was advised and made The patient was chloroformed, and under as nearly aseptic conditions as possible, the subclavian and common carotid arteries of the right side were ligated with kangaroo tendons, the former requiring seven, and the latter five minutes The wounds were dressed with collodion The patient made an uneventful recovery, and returned home at the end of twenty-one days After the third day, the bruit was less marked, growing gradually less as time progressed, until now no bruit is to be heard, but there appears to be great commotion within the dust walls on auscultation The operation caused no appreciable change in the circulation, and the temperature was only slightly elevated for a few days, on the second day reaching 100 The chest prominence at time of patient's dismissal from hospital was much less than before operation, and pulsation that was distinct three weeks before almost gone, showing the rapid progress of probable consolidation He has gained about twelve pounds, and now reports that he feels better than at any time for eighteen months

The following conclusions are submitted

1 The remedy lies within the domain of surgery

2 There are but two such methods at the present time to be considered (*a*) Obstruction of the right subclavian and common carotid arteries, (*b*) Introduction of wire or needles into the sac, with or without galvanism

3 Either one or both of the operations should be applied in all cases after a thorough saturation with the iodids

4 Ligation is attended by less danger, less mortality, greater and more permanent and universal benefit

5 Ligation of the subclavian and common carotid arteries is less dangerous than ligation of the innominate In point of fact, the latter should not be done

6 The iodids should always precede and follow any surgical interference

7 Extreme atheroma might contraindicate ligation

8 Extreme atheroma might possibly indicate the introduction of needles, or wire, with or without galvanism

9 Atheroma to some degree is present in the majority of arch aneurysms

10 It is impossible to technically classify arch aneurysms

11 The results of ligation in the case herein contained have been far more beneficial than was ever anticipated

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REMOVAL OF THE EPITHELIOMATOUS TONSIL, BY THE EXTERNAL ROUTE (PHARYNGOTOMY), WITH A REPORT OF TWO SUCCESSFUL CASES

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Colo June 7 10 1898

BY A F JONAS, M D ,
OMAHA

It is not our purpose today to discuss epithelioma from an etiologic or pathologic standpoint these subjects belong to those who are more competent, and should receive consideration only from those whose authority is based on experimental research As practical surgeons we are chiefly concerned in the clinical and operative aspects of this insidious, relentless and fatal disease

We will direct our attention to the tonsil when affected by epithelioma This, on first thought, does not seem to be the place for discussing diseases of the tonsil, but nearly every special field that is more or less surgical, will have in it more or less work for the general surgeon The field of laryngology and rhinology, in common with others, contains many diseases whose surgical magnitude and responsibility seem to require a general surgeon for their management The cases which will serve to illustrate our theme today were referred by the specialist to the surgeon, therefore the cases were transferred from the department of laryngology to that of general surgery, and hence their presentation at this time and place

The results from operative and other treatment of malignant disease of the tonsil have been so unsatisfactory, perhaps more unsatisfactory than when located in any other accessible cavity, that Butlin, after very careful research, exclaims "The prospect of permanent relief by operation in any case of malignant disease of the tonsil is very small, even if there can be said to be any Removal of the disease through an external incision (pharyngotomy) has hitherto proved a dangerous proceeding, and has not yielded as good results as operations through the open mouth" In future cases, pharyngotomy cannot be recommended and, unless the results produced by it are far better for the next series of cases than those which it has yielded hitherto, it must be condemned as an unjustifiable proceeding" This is certainly emphatic language by an eminent authority And yet we cannot stand idly by without an attempt to remedy the existing condition

With improved technique, increased experience and a more thorough knowledge of the dissemination of epithelioma and the more encouraging results from extirpation of epithelioma in other glandular organs more especially epithelioma of the breast, as operated according to the painstaking and minute attention to detail as taught us by Halstead, we have been prompted to renewed efforts when the disease has attacked the tonsil Fortunately, primary epithelioma of the tonsil is a rare disease, so infrequent indeed that those of large experience have seen very few cases

I desire to place on record two cases of epithelioma removed by the external route, by the operation known as pharyngotomy

Case 1 —M H, mechanic, aged 40, American, married, has always enjoyed good health, except for recurrent attacks of tonsillitis extending over a period of five or six years, the attacks recurring at least once a year, and often ending in suppuration During the intervals his throat was sensitive, much accumulation of mucus and frequent hacking cough. His family history was negative, none of his immediate relatives having been affected with carcinoma or tuberculosis

During the last year, and since his last attack of tonsillitis, he has had increased tenderness and sensitiveness in the right tonsillar region, with occasional expectoration of blood, which he believed to have come from the right tonsil Deglutition became difficult and painful He had lost in weight, which he believed to be due to his inability to swallow proper food, his diet during the last three months having consisted largely of fluids. On inspection, the right tonsil was found to be enlarged, ulcerated on its median side It was found to be very sensitive to the touch, bleeding easily On palpation with the finger it was found to be hard and irregular over its entire surface It was slightly movable The pillars of the fauces were not involved, and the entire process from the mouth seemed to be confined to the tonsil itself The pharynx and naso pharynx were reddened and slightly edematous The opposite tonsil was moderately enlarged, but to the touch with the finger, as well as in appearance, presented nothing that would suggest malignancy Beneath and slightly posterior to the angle of the right lower jaw was found an enlargement, the size of a hickory nut, which was painful and tender on pressure The diagnosis of epithelioma *of the tonsil* was made It now became a question whether this mass should be removed through the mouth by excision, *galvano*-caustic snare, *or by* the external route through the submaxillary triangle On further examination it was found that the entire growth could not with certainty be removed through the mouth A pharyngotomy was then decided upon

Under chloroform anesthesia, a triangular flap was reflected forward, the lines of incision extending along the lower margin of the lower jaw, beginning about midway on the horizontal ramus and extending to the mastoid process, and thence downward along the anterior margin of the sterno cleido mastoid muscle, to a point opposite the cricoid cartilage, the submaxillary and superior carotid triangles were exposed The enlarged and affected gland was situated within the submaxillary triangle, by means of blunt dissection the surrounding structures were separated without much hemorrhage The sterno cleido mastoid, together with the carotid artery, the internal jugular vein and pneumogastric nerve were retracted posteriorly with blunt hooks The diagastric, mylo hyoid, hyo glossus were likewise retracted The tongue now became unmanageable, interfering with respiration, so it was drawn forward and held by means of a vulsellum forceps The left index finger was now introduced into the mouth and pressure made outward against the tonsil The head was drawn strongly to the left side, and by means of a blunt dissector the tonsil was gradually separated, and the growth removed The pharynx and larynx could now be inspected With curved scissors and pincette the ragged margins of the wound were trimmed No blood seemed to have entered the larynx The pillars of the fauces were drawn together with catgut and the external wound closed with deep interrupted silk sutures No drain The healing process was uneventful The patient was nourished with a feeding tube nearly two weeks, after which time deglutition gradually improved The patient was last seen nearly four years after the operation, with no trace of recurrence

Case 2 —H M, farmer aged 56, married, muscular, well nourished He was always well until eighteen years ago, when he suffered from pneumonia, from which he completely recovered He has been of constipated habit for nearly twenty five years, has had hemorrhoids in mild form His digestion has been imperfect, eructations of gas and occasionally of fluids, which he described as being at times sour, at other times bitter and again salty in taste For many years he has had chronic pharyngitis, always greatly aggravated on exposure to cold, producing hoarseness and much tenderness during deglutition About one year ago he began to experience pain, sometimes of a lancinating character, and tenderness in the left side of the throat when swallowing He coughed much expectorating a muco sanguinolent substance, and occasionally clear blood in considerable quantity, which temporarily gave relief from pain His medical attendant, believing that he had to deal with an hypertrophied tonsil, attempted its removal, and did remove the larger part with a tonsillotome Within a short time the pain increased, the muco purulent expectoration appearing in augmenting quantities, until in a few weeks he was unable to sleep without opiates He consulted Dr Kinsler, who diagnosed epithelioma of the tonsil and referred the case to the writer for operation

On inspection a hard, nodular, ulcerating, easily bleeding mass, occupying the site of the left tonsil, projecting toward the uvula and extending upward along the anterior and posterior pillars of the fauces to the soft palate, and downward to the margin of the epiglottis This mass was lightly movable, very tender, and bled easily On external palpation was found, immediately beneath the horizontal ramus of the jaw at its angle and extending forward nearly one third of its length, a hard ovoid mass the size of an English walnut, immediately adherent to the soft sublingual gland Below this mass could be felt three hazelnut-sized nodules

The diagnosis of epithelioma *of the left tonsil with involvement* of the submaxillary lymphatics and the sublingual gland was confirmed

Excision of the affected structures by an external route was determined and was done April 26, 1898 A strong silk suture was passed through the point of the tongue for the purpose of controlling this organ A tracheotomy tube was at hand in
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case or [illegible] made, beginning at the mastoid process and
An incision was [illegible] to a point opposite the lower margin of
extending downward t[illegible]nd a second, beginning at the point of
the *thyroid* cartilage, [illegible] first and extending forward along the
commencement of th[illegible]orizontal ramus of the inferior maxillary
lower margin of the h[illegible] This flap was, by rapid dissection, turned
to its middle point [illegible]ard giving ample room for all manipula
downward and forw[illegible] jugular vein was ligated between two lig
tions The external On palpation a number of distinctly infil
atures and divided [illegible]elt beneath the sterno cleido mastoid This
trated glands were f[illegible] diagonally and its ends reflected, giving
muscle was divided

easy access to the involved structures By blunt dissection it was found that the glandular enlargements were intimately and firmly attached to the internal jugular and both internal and external carotids The pneumogastric nerve was isolated and the vein and arteries ligated, greatly facilitating the extirpation of all the nodes, together with the sublingual gland, which was plainly involved After an exact hemostasis the head was drawn toward the right, the tonsillar mass was seized from the wound with a four pronged vulsellum forceps and pressure from the throat outward with the index finger of an assistant, the pharynx was opened with curved scissors and the mass rapidly clipped away It was now possible to inspect the pharynx, and several remaining masses were easily clipped away The hemorrhage was slight and easily controlled No blood had entered the larynx After copious flushing and swabbing an attempt was made to approximate the buccal and pharyngeal mucous membranes with strong catgut, but with only partial success The deeper soft structures were coaptated with same suture material and the integument with a subcuticular silkworm gut A gauze drain was placed in the lower angle of the wound The external wound, except where the drain was placed, united *per primum* Feeding through a stomach tube began the day following the operation The gauze drain was removed on the third day It soon became evident that a communication with the pharynx had formed by way of the drainage canal, air and fluids escaping through it, making deglutition impossible, necessitating an unusually long period of artificial feeding through the feeding tube, about six weeks The fistula gradually closed The pharyngeal wound granulated slowly but completely

During the first ten days after the operation, a great difficulty was experienced in preventing the insufflation of mucus and the secretions from the pharyngeal wound, several severe attacks of laryngeal spasm were exceedingly alarming On the third day the patient suddenly discovered that his vision in the left eye was abolished On examination by Dr Harold Gifford, he found a choked optic disc, which he believed to be due to an embolus The central retinal artery was blocked by an embolus or thrombus, more probably the latter, as the extreme edema of the disc made it probable that the postciliary arteries also were blocked It was also interesting to note that the tongue became atrophied on its left side, interfering somewhat with articulation He continued to improve for nearly three months after his operation, when he was attacked with catarrhal pneumonia and died No evidences of recurrence in the throat He never, however, regained the power to swallow solid food, only thin liquids could be taken without the feeding tube

In reviewing the technic present in our cases, it would seem that ample access to the diseased structures was obtained The procedure is at best a severe and mutilating one In the main the method followed in our cases was that of Cheever of Boston, who first removed a malignant tonsil by pharyngotomy It seems that so extensive an operation as proposed and carried out by Czerny is hardly necessary After a tracheotomy he made an incision, beginning at the angle of the mouth, extending downward to the anterior margin of the masseter muscle and thence to the level of the hyoid bone The jaw was exposed and divided between the second and third molar teeth, the fragments were separated and the tumor removed, after requiring a section of the glosso pharyngeal, hypoglossus, styloglossus and stylohyoid muscles and gustatory nerve The bone fragments were reunited with silver wire Nor does the method of Mikulicz seem necessary He reflected a triangular flap as in our cases, the incision being very long The jaw, after being exposed above its angle, was divided, and the ascending ramus resected, in order that better access to the gland might be had We found that, after a thorough and extensive enucleation of all the cervical glands, whether visibly infected or not, after a division of the sterno-cleido-mastoid and its divided ends were reflected and hemorrhage carefully controlled, with a wide separation of the wound margins by retractors, and the head being strongly drawn to the opposite side, and strong traction downward of the arm and shoulder on the affected side being made, sufficient room was obtained for all necessary manipulations In both of our cases the entire larynx and naso pharyx could be inspected, so that a thorough removal of all affected tissues could be made under direct ocular inspection

In neither of our cases was a preliminary tracheotomy necessary, chiefly because all hemorrhage was controlled and the dissection made to the mucous membrane before the pharynx was opened

The loss of vision in the left eye of our second case was undoubtedly due to an embolus, but to state just how an embolus could reach the eye is not easy to solve It is the first observation of this kind made by us, after many ligations of the common, internal and external carotids and jugular veins, in the removal of nearly every variety of neoplasms in the region of the neck

THE WAX-PARAFFIN DRESSING

Presented to the Section on Surgery and Anatomy at the Forth ninth Annual meeting of the American Medical Association held at Denver Colo, June 7-10 1898

BY SAMUEL H FRIEND, M D

MILWAUKEE

The wax paraffin dressing, as announced in the *Medical News* of October 23, 1897, is a mixture of equal parts of unpurified yellow beeswax and hard paraffin

Composition Equal parts, by weight, of unpurified yellow beeswax and hard paraffin

Preparation Melt these substances together, preferably over a sand bath (though a water bath will also answer), and after melting keep them liquified for one-half hour to complete mixture The specific gravity of yellow wax is between 955 and 967, the melting point 63 degrees to 64 degrees C (145 4 degrees to 147 2 degrees F) Hard paraffin has a specific gravity of 900, and a melting point at 43 to 65 degrees C (109 to 151 degrees F) The object of boiling the two substances together for one-half hour is to diffuse them as much as possible By covering the mouth of the bottle with wire gauze or absorbent cotton the mixture will attain a higher temperature and produce a more equal diffusion Ehrlenmeyer's flask is useful to hold the dressing, as the glass of this flask is thin and offers a large base to melt the mixture quickly, although any bottle may be used Forty to fifty grams of the dressing will melt within four to six minutes As already detailed, the specific gravities and the melting points of the wax and paraffin are not the same, and as the substances are never equally diffused, the paraffin melts first, so that the mixture should not be used until the entire mass is melted Another point worthy of note is that immediately after the mixture is melted its temperature at the bottom of the bottle is 105 C, while the top is 122 C This difference of the temperature lasts but two minutes at the end of which time the bottom layer registers two to three degrees higher than the top The dressing is either directly spread upon wounded surfaces or upon dressings of absorbent cotton or gauze

Properties This mixture is sterile It is light in weight, cohesive, rigid, ductile, tenacious, adhesive, air, water and germ proof, and has an agreeable odor, and solidifies instantly As it is a [illegible]ect non-conductor it retains an [illegible]bout the wound and hastens regeneration Never irritating the skin, it can be easily removed Upon the slightest pressure from below it allows free drainage It will hold in suspension almost all of the well-known antiseptic powders It will cover and retain in contact with the skin and other surfaces all medication It will adjust itself to any part of the body and form a rigid splint in conformity with the part If used as a splint it will be easily and quickly cast and cut It can be used upon gauze and absorbent cotton, increasing their usefulness It adheres equally well to dry and to wet surfaces, and even to very wet surfaces The heat retained in it is hemostatic and quickly forms a dry wound

Physiologic action When the mixture in the bottle registers between 121 and 160 degrees C (250 to 320 degrees F) and is quickly removed and applied by means of a swab or brush, it will burn tissue and so produce contraction The thickness of the layer of dressing depends upon the temperature of the mixture when applied The hotter it is, the thinner is the layer This temperature of 121 to 160 degrees C (250 to 320 degrees F) should then be used only on bleeding points and when cauterization is required When the temperature of the dressing in the bottle registers 122 degrees C (252 6 F), which temperature is reached when the mixture is completely melted, its action is dessicating and hemostatic, and there is produced within a few hours a dry wound with a firm scab As the mixture cools rapidly in transferring, the heat of it is hardly felt When the mixture in the bottle registers 88 degrees C (190 degrees F) it produces no sensation and can be used as a weak hemostatic and to protect the parts After the first layer has been spread the temperature of the mixture is immaterial Layer after layer can be added At 65 to 75 degrees C (149 to 167 degrees F) it is still adhesive, but not hemostatic, and begins to harden on the side of the bottle

Usage Its usage is as follows On operative and accidental wounds I have used it after operating for abscesses on the neck, circumcision, after removal of small tumors on the cheek, and in cases of eczema I have applied it after accidental cuts over the head and face, in cases of crushed and fractured fingers, using it both as a dressing and a splint, on contused wounds of the scalp, on burns, upon indolent ulcers of the legs, wounds to the ears, after operations for the removal of epithelioma of the lip

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WET DRESSINGS IN SURGERY

Presented in Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Colo, June 7-10 1898

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This may well be called the *dressing period* in the evolution of surgery Time was when the scapel alone was emblazoned on the escutcheon of the surgeon and with the skillful incision his responsibility ended, nor did the dignity of his office admit of his performing what then were held as the minor and menial offices of *after treatment* which then was supposed to cover everything that followed upon the first brilliant sweep of the surgeon's glittering steel There are no doubt some who hear me today who remember the dramatic toss of the knife behind him of the elder Gross when completing his incision and the autocratic delivery of the case to his assistants for the dressing and treatment of the wound

Even to this day the red, white and blue stripes of the barber pole tell of surgery's humble origin, and the bandagers and bone-setters still roam through the villages of England and the barber surgeons still apply the leech and cup for the more dignified practitioner It remained for Sir Joseph Lister to break the spell of *otium cum digitate*, which was the bane of all surgical progress, and teach the autocrats of the scalpel that surgery meant much more to the organism than the mere solution of continuity along anatomical lines —that this indeed was the *avant courier* of the real principle from which all the almost miraculous achievements of modern surgery had been evolved

It was my privilege to be present at the presentation to the British Association at Edinburgh in 1875, by Professor Lister, for the first time, of a clinical demonstration of his mode of surgical dressing, which opened to surgery new worlds to conquer The case was one of ligation of the external iliac, and the elaborate dressings being removed proved the triumph of his principle, though his venerable colleague, Professor Spence, almost on the verge of eternity, threw a well-poised Parthian lance at the rising genius of modern surgery Since that day every operation, however simple in itself, has been one in which the surgeon "earned his bread by the sweat of his brow" No turning over the case to the unwashed student, for he whose records of success are proclaimed today is the operator who leaves not his patient until the last jot and tittle of aseptic dressing has been fulfilled, for so exacting is this principle that *falsus in uno, falsus in omno* is the inflexible law of its operation

As a matter of course with the increase of such labor, necessary as it has proved to be to insure surgical success, the ingenuity of man was set to work at once to simplify the methods without impairing the efficiency of aseptic surgery So active has been the work in this field that apparatus of every device and design has been offered to the profession until its name is legion, and of making of dressings as the patriarch said of books, "there is no end" As in everything else the element of "fadism" or surgical "fashion" has been dominant even in this unesthetic field, and the very men who pretend above all others to contemn the follies of feminine fashion are themselves afraid to say their soul is their own when it comes to operating and dressing of wounds before their lynx-eyed professional rivals For years past, for example, it had been almost as much as a surgeon's name was worth to apply oleaginous preparations to surface lesions, although the very first treatment of wounds of which we read recommends the "pouring of oil," and in the case of the good Samaritan received the endorsement of the Great Physician himself

There are some things however that fashion can not forbid, and this is one of them, like Banquo's ghost "it *will* not down" Long before science had thrown its searchlights over the dark field of biogenesis, experience had taught the steel clad warrior the virtues of Gilead's balm, and from the shades of Olivet, where fell the tears of Him who came for the healing of the nations, man had learned to gather the oil for his wounded body Since the discovery of the bacteriologic processes of infection in open wounds there has been a gradually growing tendency to return to the ancient remedial agents which experience dogmatically taught were rationally indicated In the last edition of that eminently practical work upon surgery, by Wyeth of New York, we find this positive and significant utterance upon the use of oil and balsam, the first surgical dressings known to humanity "I know of nothing equal to this valuable preparation The oil acts in a two fold way, the surface of the wound is moistened by it, while the liquid excretion from the wounded surface is carried off in the dressing by capillary attraction The removal of moisture cripples the proliferation of the bacteria and in this way aids in antisepsis "

In the process of repair all the structural elements must be supplied from beneath the surface of the lesions so that the constructive metabolism would not be injured by the mechanical interference of the oil globules which, as intimated in the quotation just made, would "cripple the proliferation of bacteria," which comes from without There are many wet dressings, which if frequently renewed show excellent results, but there are few cases which come before us in which disturbance of dressing does not do mechanical injury to the process of repair, besides exposing the wound to the entrance of pyogenic and other cocci while the dressing is being changed, while the retention of material which has expended its aseptic influence is a constant menace to the integrity of the organism at large Lister was working to the overcoming of these difficulties when he devised his "paste" dressing, which however failed to meet the desired ends in many cases The use of animal and vegetal oils is also open to the objection offered to solutions in dressings—the necessity of changing, the dressings too often—but for a different reason, the tendency of the oils to become rancid and this applies also to the keeping of such dressings prepared for use Wyeth recommends in his oil and balsam dressing the sterilization of the oil before using, but admits that this is often impracticable and recommends in this case the use of plain, cold castor oil of the shops

It is therefore clear that to carry out the idea of a practical dressing it must be

1 Antiseptic This applies not only to the effect of the application to the part affected, but to the corporate substance itself, thus insuring it against autoinfection before applying

2 Permanent This is necessary in order to avoid too frequent removals as well as to preserve itself from deterioration

3 Non-irritating There is nothing more delicate, more easily disturbed than the formative principles of tissue, so that care must be taken in the dressing of all lesions of surface lest the agents used should arrest the tender process of repair, as well as protect it from the invasion of destructive germs

4 Constructive While the majority of lesions, especially those of traumatic origin, if not interfered with by destructive germs, will heal rapidly of themselves, there are very many which require not only this negative condition but also a positive stimulation of function in the constructive elements of the part Stimulation of cell growth however must not go to the extent of irritation, in which case there will be destruction instead of construction of tissue

The fulfilment of these conditions has been the aim of the surgical pharmacist from the time when the first coccus wriggled across the field of the microscope and gave its first exhibition to the scientific investigator of its dance of death within the organism of man But amid all this elaboration of apparatus it was to Sir Astley Cooper, after all, that the credit is due for his foreseeing therapy, leaping over as it were the dark chasm which separated the triumphs of his surgical pathology It was he, who without the knowledge of the bacteriologic factor in the great problem of surgical treatment, by the intuition of genius gave to us the essential principles of external dressing for surface lesions His formula, however, was open to the objection of violating one of the conditions herein laid down, that of permanence, in that lard was used instead of petrolatum, which has been since discovered, and is now substituted in the preparation known as ungentine, which is an ideal formula constructed along the lines of that suggested by Sir Astley Cooper but altered to the conditions of modern aseptic surgery The irritating effects of the ordinary alum has also in some way been obviated, furnishing thus a typical dressing for surface lesions For internal lesions that are to be immediately and permanently closed beneath the sutured integument, there are many valuable aseptic liquid preparations which we prefer to the too indiscriminate use of iodoform, aristol *et id omne genus*, but we are free to admit that for all external dressings we have found the highest fulfillment of modern aseptic or antiseptic surgery in the preparation just mentioned

I am not sure whether this is a proprietary preparation or not, but this I do know, its formula is an ideal one and its results are certainly very satisfactory It is about time we were looking around after labor saving methods when we have to employ at the simplest incisive operations an extra attendant to wipe the sweat from our brows, as the houri fans the Sultan's heated cheek, though our attendants are not all houris nor are our cheeks fired with the congestion of a lazy passion We are glad to see this unholy war against oleaginous applications coming to an end, just as we should be also glad to see the phlebotomy pendulum point to the nadir In surgical politics I am a middle of the road man—*in medio tutissimus ibis*

SURGERY OF THE LUNG

The Oration in Surgery Delivered at the Forty ninth Annual Meeting
of the American Medical Association, held at
Denver Col , June 7 10 1898

BY J B MURPHY, M D
CHICAGO ILL

(Concluded from page 297)

Carron proposed to compress the lung over tubercular cavities with the hope that the collapse of the lung would be followed by an obliteration of the cavities MacEwen favors resection of the ribs to allow the contraction of the chest over small cavities and the drainage and even curettement of large ones Coromilas, Greece, favors pneumotomy and early surgical interference in tubercular processes

If the adhesions be firm and the parietal and visceral layers can not be separated, then the parietal layer should be separated from its costal attachments and allowed to sink in with the lung, or it should be held compressed by a tampon beneath the flap for forty-eight to seventy-two hours Will found that in thirty-six cases of tuberculosis in the early stage, thirty-two admitted of complete collapse of the lung and four only partial If on examination it be found that the lung is free from adhesions, or that circumscribed adhesions exist, then the treatment is entirely different, the lung may be forced to collapse by the injection of a fluid which is slowly absorbed, as the mineral oils, albolene, etc, or better still, it may be compressed and retained compressed by the injection of nitrogen gas, after the method described for the determination of pleuritic adhesions That this method is practicable, as far as its technique is concerned I have demonstrated in the following cases It can be given with little more pain than a hypodermic injection The patients suffering from tuberculosis of the lung on whom I used this treatment are progressing favorably We have had no postmortems to show the reparative effect upon the tubercular process The radiographs show distinctly that the lungs remain compressed The X-ray is of inestimable value in studying pathologic processes of the lung, particularly in the localization of cavities (see radiographs Nos 5, 6 and 7) The degree of compression of the lung can be photographed and the rapidity of absorption of gas estimated by comparison of pictures (see radiographs Nos 8 and 9) The outline of adhesions when gas is injected is pictured on the plate (see right side of radiograph No 10) The following histories illustrate the method of injection and its effect

Case 1 —Charles K , age 23, Cook County Infirmary, was admitted to the hospital April 30 He had suffered from tuberculosis of the right apex since November, 1897 Physical signs showed that it extended down to the lower margin of the third rib, there was no evidence of a cavity, tubercle bacilli were found in the sputum, patient had been coughing for three months, this was so frequent and persistent that he could not sleep His temperature on the evening of his admission was 102 degrees He had been having night sweats, was somewhat emaciated, and his appetite was poor It was decided to immobilize the lung One hundred and twenty cubic inches of nitrogen gas was injected in the sixth intercostal space after the method described above The lung collapsed and he presented all of the signs of pneumothorax The heart was displaced to the left five eighths of an inch The patient's breathing while on the table was a little rapid and the effort somewhat labored He was up and about the room in five minutes and stated that he felt no distress whatever from the treatment His cough was almost immediately relieved, he slept the following night without a coughing spell, during the day there was a superficial coughing effort to "clear the throat," as he expressed it Eight days after the injection he came to my office and I examined him and found that the pneumothorax still existed There was a small area of emphysematous crackling in the neighborhood of the puncture, distant tubular breathing could be heard, the patient's temperature had lowered to 99 7 degrees in the evening and was usually below normal in the morning I had a radiograph of his chest made at this time (See radiograph No 8 Left side of plate was defective) I have seen this patient every week since and his condition continues good The last radiograph shows that but a very small quantity of the gas had disappeared, which I believe has escaped into the cellular tissue of the chest wall, as the area of the emphysema has increased

Examination July 8 The pneumothorax had not diminished in the least There was not a respiratory sound on the right half of the chest. The hepatic dulness was down almost to the margin of the ribs, the intercostal spaces bulged, there was a tympanitic percussion note over the right half of the thorax, the pulmonary quiescence was still complete The patient had not coughed or expectorated a particle in five weeks, eats and sleeps well He had had no fever and his temperature at 4 30 today is 98 2 degrees He had not been weighed, although he feels that he has gained in weight It is two months and a half since the injection was made and the quantity of gas is practically the same, showing that the absorption of the nitrogen is extremely slow indeed, if any of it is removed by that process

Dr Alexander C Weiner and Dr James G Berry examined this patient with me

Case 2 —E. L , male, age 34, Cook County Infirmary, was in the second stage of phthisis with cavity in right upper lobe Endeavor was made to fill the right pleural cavity with gas, but as adhesions were found it could not be accomplished He was not in condition to withstand operation for compression of the chest wall The gas entered the cellular tissue of the chest and remained there three weeks, showing how slowly it is absorbed

Case 3 —H A E , male, age 30, Alexian Brothers' Hospital, admitted May 10, 1898 Family history shows several cases of tuberculosis His cough and fever began about Oct 1, 1897 Cough very severe, expectoration limited Night sweats since January, 1898 There were physical signs of apical tuberculosis on the right side, patient gave no history of pre existing pleurisy, he was placed on the table, trocar inserted in the sixth intercostal space, anterior axillary line and two hundred cubic inches of nitrogen gas was injected after method described above It was found when the trocar entered the pleura that it required no pressure to force the gas into the pleural cavity It produced very slight coughing and but little anxiety to the patient from shortness of breath, the pulse was increased in frequency to 96 and the lips were discolored a light blue, the apex beat was displaced one inch to the left, the hepatic dulness three inches downward, the respiratory sounds entirely disappeared on the right side, respirations were increased to 26 Patient was removed to his bed, thirty minutes later was sitting up in bed eating his dinner, he said "he felt a binding in the chest and a tickling sensation in the throat," he remained in bed for two days, as his respirations were a little increased in frequency and he complained of some discomfort in the epi sternal region Radiograph No 11 shows the compression of the right lung Examined May 20 The respiratory sounds still absent, the cardiac displacement continues, there is still absence of the hepatic chest dulness, his respirations are normal and his cough has disappeared, no expectoration

June 30 patient presented himself again for examination, he thought his breathing was still a little short Cough has entirely ceased, he has had no night sweats, has gained ten and one half pounds in three weeks, his appetite is excellent.

Physical examination The respiratory sounds are returning, though still distant, there are no râles, the percussion note shows that the chest has still a considerable quantity of gas, the liver dulness is absent down to the margin of the eighth rib and the apex beat is in about the normal position The mediastinal dulness is to the left of the margin of the sternum, there is some bulging of the intercostal spaces, though not so marked as in previous examinations.

Case 4 —P C , male, age 23 Admitted to Alexian Brothers' Hospital six weeks ago Patient was in second stage of tuberculosis of the right lung May 12 an effort was made to inject the gas in the usual manner, but adhesions prevented the admission of the gas

Case 5 —Alexian Brothers' Hospital, E D , May 12 Patient in first stage of tuberculosis in the right apex, has had cough, expectoration, night sweats and fever since August, 1897, bacilli in the sputum, had frequent attacks of pleurisy Method of injection of gas the same as in case 1 Puncture made in sixth intercostal space, mid-axillary line When parietal pleura was penetrated the gas readily passed into pleural cavity, seventy cubic inches were injected Physical signs of pneumothorax rapidly appeared, liver dulness displaced downward one and one half inches, apex beat displaced one-half inch to the left Patient said he felt "his breath was shorter " The opening was sealed In one half hour the patient said he felt no inconvenience whatever from the injection, and was walking about the ward He left the hospital a few days following his injection on May 12 I did not see him again until he presented himself for examination June 30 He was greatly improved in appearance, there was a slight cough, but no expectoration, he had gained in weight, his appetite was excellent.

Physical examination showed that there had been some absorption of gas, although a tympanitic sound was distinctly present over the former area of liver dulness The respiratory sounds were feeble, there were no râles Seventy cubic inches of gas was injected in the usual manner It did not produce the slightest discomfort. After the injection the liver dulness was displaced almost to the costal arch There was no displacement of the heart There was some bulging of the intercostal spaces Patient left the hospital immediately for his home

July 7, at Alexian Brothers' Hospital two cases of apical tuberculosis were injected, in one 75 and in the other 80 cubic inches of gas was used, in neither was there the least discomfort from the insertion of gas, in a third case adhesions were found, making it impossible to succeed in the injection The cases in which I believe this method most practicable are apical or monolobar tuberculosis in the early stage, as the pathologic conditions are such that the compression of the lung can be accomplished and adhesions are not likely to be found I do not consider that it is indicated nor practical in advanced nor chronic tuberculosis, as the fibrous tissue deposited in the lung will not permit compression of the lung, nor will the pleuritic adhesions allow of gas injection So far no conclusion can be drawn as to the ultimate result of this treatment Theoretically its dangers may be *a*, hemorrhage from wounding the intercostal vessels, *b*, injecting gas into the intercostal vein, the possibility of which I question, *c*, infection by the use of impure gas, infected trocar or improper antiseptic preparation of chest; *d*, rupture of infected foci into the pleural cavity through compression of lung and separation of pleuritic adhesions, *e*, dyspnea from the use of too large quantity of gas, this can be readily relieved by changing the direction of the current in the siphon, *f*, puncture of the lung with the canula This will not take place unless adhesions are present, and if the lung should be punctured it is a matter of no consequence, as experiments and clinical experience show that the lung can suffer great traumatism without danger While these possibilities of danger are mentioned, none of them occurred in my experiments I believe the gas should be reinjected every six to ten weeks as might be deemed necessary in the individual case depending upon the amount of absorption If the respiratory sounds return the injection should be repeated So far I have repeated the injection in but one case

Technic of injection —The point of insertion of the trocar varies somewhat in the individual case If the apex of the lung be the seat of the lesion, the trocar should be inserted below the fourth interspace and back of the mid-axillary line The best point is in the fifth interspace at the anterior axillary line If it be a middle or lower lobed tuberculosis, the injection should be made over the upper lobe, preferably in the third interspace just outside the mammary line The chest wall should be thoroughly cleansed and rendered aseptic Chlorid of ethyl should be used for local anesthesia A tenotome puncture should be made through the derma, this allows the trocar to be easily inserted The stilette in the trocar should be withdrawn when the rib is reached, the gas should now be turned on, the trocar should then be pushed inward, hugging the margin of the rib When the parietal pleura is punctured the trocar advances rapidly and the gas begins to flow freely into the cavity unless adhesions exist If adhesions be present the gas will not flow The trocar should be taken out and inserted in the same manner in another position

The quantity of gas to be injected will vary considerably and should range from 50 to 200 cu in , the amount to be given in each case will be regulated by the symptoms—distress, dyspnea and the displacement of the mediastinal contents and diaphragm The respiratory sounds on that side should be suppressed unless too great dyspnea is produced If the patient's discomfort is great the current of gas can be reversed until relief is obtained The trocar should then be withdrawn, the wound sealed with collodion and a moderately firm cotton compress placed over the puncture The compress is to prevent the escape of gas from the pleura into the subcutaneous cellular tissue The lung should be kept quiescent from three to six months or even longer, depending upon the symptoms When the lung re-expands, if there be evidence of active tuberculosis, the injection should be repeated, also when the respiratory sounds return the injection should be repeated, that is, the quiescence must be maintained to have the treatment effectual During the treatment the hygienic surroundings of the patient should be the most favorable, his diet should be wholesome and nutritious

Preparation of the nitrogen gas —The nitrogen gas used on my patients was prepared by Prof John A Wesener of the Columbus Medical Laboratory, in the following manner Compressed air was allowed to pass slowly through a solution containing pyrogallic acid and potash, this solution absorbed the oxygen, the nitrogen thus obtained was purified by washing it through potash and then through sulphuric acid, it was then collected in a rubber gas bag which had been sterilized with a 5 per cent carbolic acid solution It may be retained in the gas bag or stored in a small metallic cylinder

APPARATUS

A properly constructed apparatus should provide means for noting the escaping gas and measuring its volume in cubic inches The appliance shown in the accompanying illustration consists of a gas bag for storing the gas, a graduated bottle in which the passing gas may be measured, and a reservoir for securing hydrostatic pressure by means of which the gas may be forced into the pleural cavity

The measuring bottle is supplied with a three way stop-cock, one to connect with the gas bag, one with the reservoir, and a third with the trocar One of these stop cocks terminates in a tube extending to the bottom of the bottle, this cock being connected with the reservoir It will thus be seen that if the measuring bottle be filled with water and the reservoir bottle be placed slightly above it, the water may be forced into the latter by slight pressure on the nitrogen bag After replacing the water with the gas, the former may be used as hydrostatic pressure to force the gas into the cavity

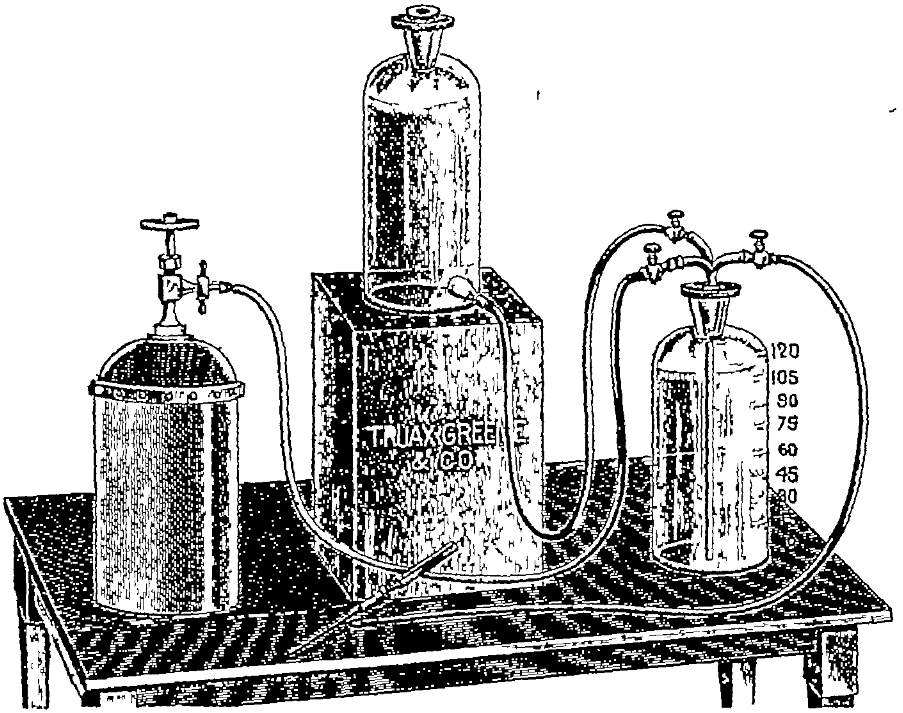
The trocar selected is of the Emmett type, one that may be attached to the bottle before its introduction It consists of a straight canula to which is joined at a point near its proximal end a side tube, with which the connection is made with the bottle This tube forms a bifurcation in the lumen of the main canula A suitable packing is closely pressed around the trocar shaft, so that when the perforator is withdrawn the point will rest within the chamber at its proximal end, forming an air tight joint The one I prefer is No 7, French scale

Directions —Fill the graduated bottle with sterilized water and close it with the three-way stop-cock, securely fastening the latter in place and closing all the cocks

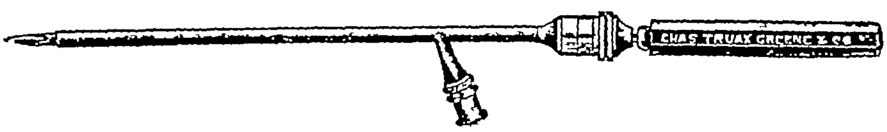
Place the reservoir or douche bottle on a box or shelf at such a height that the bottom of it will be on a level with the three way cock in the graduated bottle This height may be varied according to the pressure desired Connect this bottle with that branch of the three way cock that terminates in the rubber tube leading to the bottom of the graduated bottle

Fill the gas bag with nitrogen gas and connect it with one of the other stop cocks Attach the trocar to the longest of the three pieces of rubber tubing and connect it with the remaining stop cock. Open the two stop cocks leading to the upper bottle and gas bag Slight pressure on the latter will force the gas into the graduated bottle and the water from the latter into the reservoir Continue this pressure until the gas fills the bottle down to the zero mark Close the stop cock leading to the gas bag and open the stop cock leading to the trocar until a small quantity of gas has escaped, thus displacing the air within the tube Close the stop-cock and introduce the trocar, after which open the stop cock permitting the gas to pass through the trocar The water pressure in the reservoir, if the trocar be properly introduced, should force the gas into the pleural cavity, the water gradually replacing the escaping gas By watching the graduated scale the amount of gas indicated may be accurately noted.

Incision and drainage of tubercular cavities —Phthisical cavities have been recognized for centuries Two very interest [illegible] accid [illegible] l drainag [illegible] rcular cavities are [illegible] y writ [illegible] of the lungs [illegible] Ph suffering with disease of the lung, and believing he was beyond cure placed himself in the front of battle and received a spear thrust which opened his pulmonary cavity and restored his health Another was a case by De Bligny, 1679 the son of M de la Genevraye, who was suffering from phthisis, received in a duel a sword wound in the right side between the fourth and fifth ribs, there was an abundant purulent evacuation from the wound, after the accident he completely recovered In both of these cases, which appear mythical though true, there is nothing definite known of the nature of the abscesses, Paget has placed them as tubercular The operation for drainage of tubercular cavities received its greatest impetus shortly after the introduction of the Koch lymph, 1890, when it was considered desirable to drain the cavity to favor the exfoliation and elimination of the sequestrum supposed to be produced by the Koch lymph Cases in extremis, as far as the tuberculosis was concerned, were operated at that time, but the operation has gradually fallen into disuse so that it is resorted to now only in particularly favorable cases Eward, 1884, considered the drainage of tubercular cavities curative as well as palliative, but cited no cases The greatest barrier to surgical treatment is the difficulty of diagnosis and localization of the cavity Physical signs, as auscultation and percussion, usually indicate the cavity at a greater distance from the hilum than it really is, this is particularly true of cavities in the lower lobe The radiograph is of great assistance in determining the location of the cavity, as can be seen in those herewith reproduced accurate pictures should be taken before every operation (See Radiographs v, vi, vii) The cavity having been located and if the drainage is all that is intended a small portion of the rib may be removed over the site of the cavity and the cavity opened, this I do not consider the best practice, four to six inches of at least three ribs in the neighborhood should be removed to allow collapse of the chest wall as cicatrization and contraction of the cavity take place after drainage The parietal pleura should be separated from the ribs before incising it Palpation of the area aids materially in the location of the cavity, digital exploration after incision of the lung should be favored in tuberculosis As early as September, 1873, Mosler incised the pleura and worked his way through the lung to a cavity by dilating the tissue with an artery forceps The patient improved very much after the operation, subsequently he died of Bright's disease [73] When the location of the cavity has been determined incision should be made with the scalpel small cavities will probably be opened before the large one is reached, the lung can be gently retracted until the large cavity is freely incised, the hemorrhage may be controlled with a catgut suture or the surface seared with the Paquelin cautery The cautery should not be used to divide the lung, as it prevents inspection of the divided tissues and makes it uncertain when the cavity is reached The entire cavity should be packed with iodoform gauze, which should be allowed to remain for several days A drainage tube may then be inserted or the gauze packing repeated Failure to find the cavity has frequently occurred The ultimate result of drainage of tubercular cavities has been very unsatisfactory, which might be expected from a knowledge of the pathology of the diseased stage of cavern formation The cavities are often multiple and only one is drained by the operation, and the tuberculosis continues its usual



Apparatus for injection of the gas



Trocar—No 7 French scale

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[3] Berliner klin Woch 1873 xliii, p 603

course in the other portions of the lung The rapidity of amyloid degeneration of other organs may be somewhat retarded by the drainage, in a number of cases pulmonary fistulæ remain In 1890 I saw Hahn do a number of these operations and subsequently use the Koch lymph, at that time he reported that from his observations the results would not be satisfactory Sonnenberg, in 1891, reported good results from this treatment Kecke opposed the operation and quoted six cases of tuberculosis operated by Cerenville[74] with five deaths His personal cases were anything but satisfactory Jaenfert[75] named certain conditions contraindicating operations on tubercular cavities 1, tendency to hemorrhage, 2, the danger of pneumothorax, 3, drainage does not remove the original disease, and operations under these conditions give a great mortality Truc reports 18 cases with 6 deaths within three months after the operation Poissier and Jannesco collected 29 cases and showed 10 deaths, 15 improvements and only 4 recoveries Hofmokl reports 5 cures after treatment of tubercular cavities by operation Douglas Powell opposes the drainage of tubercular cavities on the grounds 1, that the cavities are fairly well drained, situated as they are in the apex, 2, the cavities are not often single with an activity of symptoms, 3, that excavation in phthisis is a conservative process The latter statement is misleading, true, the excavation is a conservative process, but the absorption of the products of mixed infection subsequently retained in the cavity is distinctly injurious to the entire organism, this is the principal reason for the drainage of the cavity Patients rarely ever die from simple tuberculosis of any part of the body, and particularly from simple tuberculosis of the lung, it is the mixed infection which causes the great fatality Tubercular cavities in the lower lobes are more easily drained, should give better results after drainage, and are more fatal when not drained than cavities in the upper lobes The former points are emphasized by the case reported by N Pendleton Dandridge[76] in his able article on the treatment of pulmonary cavities While drainage of large tubercular cavities has not given satisfactory results as far as cure is concerned, I feel it is the surgeon's duty to resort to this operation very frequently as a palliative measure, as it relieves these great sufferers of their most distressing symptoms, viz cough and expectoration

The following case illustrates the operation and course of cases after drainage of tubercular cavities

J. M. C , aged 46, Cook County Infirmary, has been suffering from symptoms of tuberculosis for 10 months He has emaciated to a great degree, has had severe night sweats, afternoon hectic flushes, he expectorates large quantities of purulent material with spasmodic attacks of coughing, one or two hours may pass without coughing, then he will get a severe spell and an ounce or more of pus will be expectorated, the odor of which is not particularly offensive Examination reveals râles over upper lobe of right lung, extending down to the fourth rib, bronchial breathing, absence of normal respiratory sounds, a cavity can be located under the second rib, two inches to the right of the sternum, and extends from upper margin of the second to upper margin of the third rib, its transverse diameter appears to be about one and one half inches

Operation Dec 12, 1897 It was decided to open and drain the cavity, a U shaped incision was made extending from the first to the middle of the third rib, one inch to the right of the sternum The incision was then curved upward and outward to the anterior axillary border, sub periosteal resection of about three inches of the second and third ribs was made; the parietal pleura was separated from the chest wall to the extent of about an inch around the field of operation, the exploratory puncture was now made for the first time and pus withdrawn A horizontal incision was made in the pleura over the center of the cavity, adhesions were present, and the incision continued about one and one half inches in length, until the cavity was reached, which was opened at a depth of about one inch, the hemorrhage was not profuse, and was readily controlled by pressure, a digital examination of the cavity showed that it was about two inches in diameter with an irregular surface, it was packed with iodoform gauze, there were a number of smaller bronchietatic cavities opened in making the incision and a few caseous bronchial glands were removed from the mediastinal margin, the packing was removed in fifteen minutes there was still some oozing, which was controlled by the Paquelin cautery The cavity was repacked with iodoform gauze, and the flap was accurately sutured around the gauze drain chloroform narcosis The patient was not in the least shocked by the operation, the highest pulse rate following was 92, the temperature on the third day was 100 6 degrees, after the fifth day it did not exceed 99 degrees He expectorated a bloody mucus for the first three days He had no "fits of coughing" after the operation, the packing was removed on the fifth day and a soft rubber drain inserted, he was allowed to be up and about There was a primary union of the flap except at the point of drainage The drain was allowed to remain in for five weeks, it was then removed, as a fistulous canal had been established His cough is reduced to a minimum, the discharge from the fistula is of a non purulent mucous character, and while the fistulous opening is large the quantity of discharge is small He has gained in weight, his night sweats have ceased, and his general condition is greatly improved May 30, Dr Johnson, Medical Director of the Infirmary, reports that the communication of the sinus with the cavity has closed, and that a small granulating surface remains at the external opening

I have collected reports from the literature as follows Tuberculosis of lung operated, 47, incision and drainage, 34, pneumectomy, 2, thoracoplasty, 5, puncture and drainage, 2, opening of superficial abcess, 4, recoveries, 26, recovery with fistula, 2, deaths, 19, 12 from undetermined causes, 1 multiple gangrenous foci, 1 acute miliary tuberculosis, 3 hemoptysis, 1 hemorrhage, 1 cachexia

Pneumectomy for the removal of a part or a complete lobe of the lung for a tuberculous disease has been one of the triumphs of surgical technique, but so far the clinical results have been unsatisfactory From the experiments of Gluck, Schmid, Bloch and Biondi,[77] we we were led to believe that pneumectomy as a curative method for tuberculous lesions of the lung would become an accepted surgical procedure, however, our hopes have not been realized While the operation of removal of a complete lobe of a lung has been successfully performed the number of deaths following pneumectomy has been so large that the operation has been practically abandoned The technique of pneumectomy will be given under the heading of Pneumectomy for Neoplasms

Kronlein in 1884 operated on two cases of apical tuberculosis, one lived but a few hours after the operation, the other but a few days Ruggi, 1885, operated on two cases, one died on the ninth day from carbolic poisoning, and the other thirty-six hours after the operation In 1891 Tuffier removed a small portion of the right apex through the intercostal space for tuberculosis, the patient made a good recovery and four years later was enjoying excellent health In 1893 Mr D Lowson operated successfully on a woman 34 years of age for tubercular disease of the right apex Doyen, 1895, also successfully removed a small portion of a lung for tuberculosis Kronlein and Lowson give definite rules for the operation, the latter favoring the H or U-shaped incision, removing the second, third and fourth ribs from the sternum to the axillary line, this gives a large opening

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[74] Muench Med Woch , 1891, xxxviii, p 899

[75] Muench Med Woch , 1891, xxxviii, p 6

6 Ann Surgery, xix, p 184

7 Ber Med. Woch Vc p

TUBERCULAR CAVITIES—1878 TO 1898

No	Bibliography	Sex, Age	Nature of Disease	Duration	Etiology	Location	Signs of Cavity
1878 1	Williams, B Med J R, 1878, Vol 101	M 28 yrs	Pulmonary tuberculosis, many cavities, 6 mos	6 mos	Fever, much expectoration, vomiting fetid sputum	Left side, predominating at base	Signs of cavity
1879 2	Sadler, Lancet, 1879, Vol 1, p 84	M 38 yrs	Tubercular cavity	4 yrs	Fever cachexia	Left base	Signs of cavity
1882 3	Sommerfetd, Hosp Studende 1882, No 17, p 257	M 31 yrs,	Progressive phthisis				Large cavity in right upper lobe
1882 4	Bull M World Med Archives, 1882, Vol 1, No 26	M 29 yrs	Circumscribed pneumothorax with underline tubercular cavity				
1883 5	Bull Contr F Chirurgie 1883, p 104	M 29 yrs	Tuberculosis of left apex 3d stage		Cough expectoration, hectic fever	In 1st and 2d intercostal space anteriorly	Signs of cavity
1884 6	Spencer Wells Brit Med Jour, 1884, Vol 1 p 1117	M	Tubercular cavity with axillary abscess		Axillary abscess with signs of cavity of right apex.	Right apex	Signs of cavity,
1885 7	De Trerville Revue Medicale de la Suisse Romande 1885, p 463, Obs 4	F 15 yrs	Advanced tuberculosis of both apices	2 or 3 years	Hectic fever	Left apex, clavicle to 4th rib	Signs of cavity
1885 8	Fraînkel in Truc thèse de Lyon, 1885 p 78	M	Advanced pulmonary tuberculosis		Hectic fever	Apex 2d intercostal space	Signs of cavity
1885 9	Truc th de Lyon, 1885, p 79	M 38 yrs	Pulmonary tuberculosis		Sudden and severe pains under the right clavicle	Right apex anteriorly	
1885 10	De Cereville Rev Med de la Suisse Romande, 1885, p 463, Obs 3	F 40 yrs	Pulmonary tuberculosis, 3d period		Hectic fever, cachexia	Left base	Signs of cavity
1887 11	Breen, proc of Phil Co Med Soc 1887 Vol 8, p 203	M 27 yrs	Tuberculosis with cavity		Cough, expectorated much sputa and pus T B C present, a septic temperature	Lower left pulmonary lobe	Signs of cavity
1887 12	De Cerruville, Archive Gen de Med 1887, Vol 20 p 477	F 40 yrs	Abdominal phthisis with large cavity			Left summit.	
1887 13	De Cerruville Obs 5	F 25 yrs	Tubercular infiltration of left upper lobe	4 yrs		Left apex	Signs of cavity
1887 14	Sezary et vicent Revue de Medicine, 1887, p 675	M 48 yrs	Pulmonary cavity, probably tubercular		Pleuro-pneumonia Hemoptysis	Right base posteriorly	Signs of cavity
1890 15	Denison I period of Am Med Ass'n, 1890, in Centralblatt f Chir 1890 p 791	M 26 yrs	Pulmonary tuberculosis			Base	
1890 16	Tillman's Brit Med Jour, 1890 Vol 1, p 1363	M 28 yrs	Tuberculosis of left lung, especially empyemia in lower two-thirds of left lung, several fistuli in left chest wall, heart displaced to right side right lung comparatively healthy left sided empyemia began Oct 15 1885			Left side	
1890 17	Spengler Verhand de geselsch d Naturforschen Aeurtzubremen 1890, Vol 1 p 237 in Quincke loc cit obs 2 p 241	F No age	Bilateral pulmonary tuberculosis	Several years	Cavity of left apex, partial pyo-pneumothorax.	Left apex	Signs of cavity
1891 18	Caselli baceoglitose medic, 1891 T 11, 5th series p 235	M 31 yrs	Tubercular broncho pneumonia cavity of right apex.			Second intercostal space anteriorly	Signs of cavity
1891 19	Krecke Mun Med Woch Vol 38 p 400, 1891	33 yrs	Tuberculous cavity		Septic fever chills	Right lower lobe	Signs of cavity
1891 20	Kurz Wiener Med Presse 1891, p 1389	M 30 yrs	Tuberculosis of lungs large cavities		Expectoration, fever, cachexia	Left apex, anteriorly	Signs of cavity
1891 21	Krecke Munchen Med Wochensche 1891, p 390	M 57 yrs				Right base	Signs of cavity
1891 22	Hahn 20th Cong of German Society of Surgeons	F 22 yrs	Cavity of left apex size of an apple		Purulent and fetid expectoration	Apex anteriorly	Signs of cavity
23	Lesser Munch Woch Feb. 24 1891	F 43 yrs	Tuberculosis with cavity at left apex symptoms had existed 4 years	4 yrs		Left apex	Signs of cavity
1891 24	Lesser	Same as 23	except cavity was smaller				

TUBERCULAR CAVITIES—1878 TO 1898

Pleural Adhesions	Puncture	Incision	Results		Necropsy
			Immediate	Final	
No adhesions	Puncture in the 7th interspace pneumothorax and subcutaneous emphysema 2 pints of fetid pus, lavage		Considerable amelioration 6 mos later		
Adhesions		Incision in 10th interspace without resection of rib opening of a small cavity with the finger Drainage	Death 14th day		Large cavity in left base not opened
		Puncture of cavity with trochar coarse drainage	No influence on general condition	Death in 28 days after operation	
		Thorocotomy and with forceps bored into lung, cavity was reached	Patient died 7 days after operation		
Adhesions	Puncture made blood	Pneumotomy	Death on 6th day		Partial pneumothorax, a large superficial cavity in left lung
		Incision of axillary abscess, issue of pus and gas The liquid discharged is similar to the expectorate of the patient	Recovery	Recovery without fistula	
Adhesions		Resection of 8 cm of 2d left rib exploratory puncture removal of purulent and bloody fluid Pneumotomy opening of cavity	Recovery Observation 15 days after recovery		
		Pneumotomy, drainage insufflation, iodin and phenol	Death, Hemoptysis		Purulent cavity with granulatous wall
Adhesions		Pneumotomy, discharge of pus air and gangrenous debris, drainage	Death 15th day Pains increased after operation		Bilateral tuberculosis cavity opened
		Thorocoplasty resection of 5th rib to obliterate cavity which was not opened	Death 14 days later		No necropsy
Pleural adhesions	Negative puncture Incision, trocar introduced into cavity	Resection of 1 and 1½ in of 9th rib just within a line drawn from angle of scapula, small drainage introduced next day 1 oz. of pus escaped opening dilated and several oz. of pus escaped	Recovery	Steady improvement since operation	Temperature normal
		Resection of 3d rib	Death 15 days after		
Adhesions		Resection of 3 cm of 2d and 3d ribs Pneumotomy opening of a cavity situated behind the clavicle	Death 45th day		Acute general miliary tuberculosis
Pleural adhesions	Exploratory puncture positive	Resection of 2 cm of 9th rib Pneumotomy a cavity the size of an orange, opened and drained	Death 7th day		Single cavity opened, tuberculosis of right apex more recent tubercles in left lung
		Resection of 6th and 7th ribs Pneumotomy injection of vaselin and salol	Recovery amelioration 4 months later		
Left pleural firmly adherent in upper one-third	Puncture 1 month after onset of empyemia	Thorocotomy Sept, 1886 and Jan, 1888 with resection of piece of rib in lower and hind part of thorax In April, 1888, extensive rib resection from 2d to 6th rib on left side in front, and 7th to 9th rib, left side behind On May 27, 1888, front of chest wall resected from 2d to 6th rib close to the sternal border Breadth of resection 5 cm above and 12 cm. below *left* pleura tuberculous and right lung-phthisical large as man's fist firmly adherent at 1st rib left lung partly covered by pedunculated skin flap	Organs shrank after last operation and tuberculosis of lung underwent process of spontaneous cure as a result of shrinkage	Patient discharged as cured July 23, 1888	
No adhesions		Thorocoplasty cavity not opened	Recovery	Cured 7 mos, disappearance of signs of cavity of left apex, the right apex not operated upon healed equally well	
Adhesions		Resection of 8 cm of the 2d left rib Exploratory puncture removal purulent and bloody fluid Pneumotomy, opening of cavity	Recovery 15 days after operation		
Pleural adhesions present		Resection of ribs Pleura opened with blunt instrument, lung over cavity was punctured free opening made cavity packed with iodoform gauze	Fever fell after operation considerable secretion, improvement after operation so patient could leave bed, sudden hemoptysis set in and caused death		
No adhesions		Incision in the 2d intercostal space *pneumothorax Pneumotomy, injec*tion of iodoform	Pneumothorax absorbed in 6 days *recovery without* fistula, cavity measured 12 p m in diameter	Death 3 years *later general* tuberculosis	
		Rib resection Pneumotomy, iodoform tamponade	Death Hemoptysis		
		Incision at level of upper border at 3d rib Pneumotomy without rib resection amelioration. Injections of Koch's tuberculin			
Pleural adhesions		Incision in 1st interspace 7 cm long trocar introduced cautery used to penetrate lung cavity size of apple walls curetted and packed with antiseptic gauze Koch's tuberculin injected and caused increased discharge		Patient was much improved in general health, cavity dwindled down to ½ its normal size	

TUBERCULAR CAVITIES—1878 TO 1898

No	Bibliography	Sex Age	Nature of Disease	Duration	Etiology	Location	Signs of Cavity
1891 25	Sonnenburg, 21st Congress of German Surg Soc., April, 1891, and in Quincke and trenzgelliet 1896, Vol 1 p 240, Obs 4	M 56 yrs	Bilateral pulmonary tuberculosis more marked upon right side, lesions far advanced in right lung, less so in left numerous bacilli			Right apex anteriorly.	Signs of cavity
1891 26	Sonnenburg Quincke loc. cit Obs 5	M 48 yrs	Tuberculosis of both apices predominating in left Two lesions in right		Emaciation and fever	Left apex anteriorly	Signs of cavity
1891 27	Sonnenburg, loc cit, Obs 6	M 44 yrs	Tuberculosis of both apices, predominating in left	21 mos		Left apex anteriorly.	In left apex only
1891 28	Sonnenburg, loc cit Obs 7	M 35 yrs	Bilateral pulmonary tuberculosis predominating in right lung	18 mos		Right apex anteriorly,	Signs of cavity
1892 29	Roux Revue Med de la Suisse romande, 1892, p 567		Tubercular cavity located posteriorly under the scapula and inaccessible from behind			Right lung under scapula	Signs of cavity
1892 30	Roux, ibid, 1892, p 567	F	Large tubercular cavity			Right base	
1893 31	Lowson, Brit Med. J In N Y Rec April 15, 1893 Vol 43 p 668 Brit Med J June 3 1893	F 34 yrs	Tuberculosis of right apex		Dyspepsia, night sweats Pain over top of right lung to back, cough	Apex of right lung	
1893 32	Shurly, J of M M Ass'n, 1893, 21 p 297, Obs 1	M 48 yrs	Tuberculosis of both apices Hepatization in left cavities in right Duration several years	Several years	Fever emaciation abundant expectoration	Right apex	Signs of cavity
1893 33	Shurly ibid, 1893, 21, p 297, Obs 2	M 27 yrs	Bilateral pulmonary tuberculosis, 3d period, cavity in left lung				Hectic fever multiple cavities one large cavity in the left lung and disseminated
1893 34	Voge Med and Surg Rep Phila, Dec 31 1893	F 28 yrs	Pulmonary tuberculosis		Superficial abscess beneath scapula	Base posteriorly	
1891 35	Dandridge D P Ann of Surg, Vol 19 1891, p 120	M 29 yrs	Tuberculosis of lungs			Right lower lobe	No posterior signs
1891 36	Parrier, Soc de Chirurgie 1891, p 630		Abscess of thoracic wall communicating with lung cavities in a tubercular subject				
1894 37	Tructh de Lyon	M 47 yrs	Pulmonary tuberculosis and fistulous tract opening, 4 fingers' breadth outside of nipple	2 yrs	Suppurating fistula	Right apex	
1895 38	Doyen, Cong de Chirurgie 1895 p 105		Pulmonary tuberculosis 3d stage				Signs of cavity
1895 39	Michaux Congres Francais de chirurgie 1895, p 94	F 26 yrs	Tuberculosis of right lung, multiple foci			Right base behind	Signs of cavity
1895 40	Michaux Congres Francais de Chirurgie, 1895, p 94.	F 28 yrs	Tubercular cavities		Profuse expectoration	Right base behind	Signs of cavity
1895 41	Salmoni Clinicea Chirurgica Milano 1895 p 65	M 34 yrs	Pulmonary tuberculosis following upon an old pleurisy		Cough expectoration, hectic fever, retraction of thorax	Left base	No signs of cavity
1895 42	Tuffier L'Abeille, Med Par Oct 28 1895	M 20 yrs	Tuberculosis of apex of right lung		Tubercle bacilli found in sputum		
1896 43	Quincke Mittheilunger A. D Greuzgebieten der med in Chir, 1896 1 p 240	M 46 yrs	Tubercular infiltration of right lung	2 yrs	Hectic fever	Right apex anteriorly.	Signs of cavity
1896 44	Bier in Quincke Mittheil a d Greuzgeliche 1896 1	M 26 yrs	Cavity of the right apex		Frequent hemoptysis retraction of thorax	Right apex	Signs of cavity
1896 45	Maffert Brit Med Jour, 1896 p 392	M 19 yrs	Chondro-sterno-costal tuberculosis and pulmonary tuberculosis		Symptoms of purulent pleurisy	Left base	No signs of cavity
1898 46	New York Med News D Tait and Abrams Feb 26 1878. p 263	M 7 yrs	Acute tuberculosis		Previous croupous pneumonia, night sweats progressive emaciation.	Lower lobe of left lung upper portion	

TUBERCULAR CAVITIES—1878 TO 1898

Pleural Adhesions	Puncture	Incision	Results		Necropsy
			Immediate	Final	
Adhesions		Incision parallel with clavicle, resection of a fragment of 1st rib exploratory puncture Pneumotomy opening of a cavity the size of hazel nut, iodoform tamponade	Recovery Cavity rapidly obliterated (2 mos) Injection of Koch's tuberculin after the operation many bacilli in the sputum	Recovery	
Adhesions		Parallel with clavicle puncture Pneumotomy, opening of a cavity the size of a walnut	Recovery Injection of Koch's tuberculin after operation	No amelioration	
Adhesions		Parallel with clavicle puncture Pneumotomy opening of a cavity the size of a hazel nut 1 cm deep	Recovery Injection of tuberculin after operation	No amelioration	
No adhesions		Resection of 4th rib Incision of pleura, Partial pneumothorax Pneumotomy injection of tuberculin	Death 7th week Cavity opened spontaneously on 11th day through scar		
No adhesions		Pneumotomy after suture of pleura Opening of a small cavity Drainage, incision made in anterior wall of thorax	Recovery A large cavity which could not be opened discharged into the inside cavity 3 weeks later Patient much improved		
Adhesions		Pneumotomy drainage	Recovery	Marked improvement, drainage maintained until complete closure of cavity	
Pleural adhesions		Anterior ½ of 2d and 3d ribs removed parietal layer of pleura opened apex of lung pulled out after transfixed with needle tied with strong silk and removed	Pneumothorax developed suddenly but gave no trouble	Wound was healed by end of 3d week	
Pleural adhesions		Level of 2d intercostal space Pneumotomy opening of a cavity located 2 cm deep Hemorrhage at the moment of incision drainage injection of chlorin gas next day	Death on 8th day from hemorrhage		No necropsy
Adhesions		Incision in 3d interspace Pneumotomy, opening of a cavity drainage Injection of chlorin gas	Death 24th day, cachexia		No necropsy
		Superficial incision, issue of pus of gangrenous debris and gas Iodin injected into the wound appeared in the sputum	Recovery		
Pleural adhesions	Positive puncture bloody fluid	3 inches of 8th and 9th ribs removed in axillary line underlying cavity freely opened ¼ pint bloody purulent fluid caseous material evacuated irrigations with boric and sal skin incision partly closed double drainage tube, tube taken out after several days Incision healed	Immediate improvement	Was soon up and about house Area of dulness diminished Respiratory sounds heard at a lower level than before	
		Incision and drainage	Recovery		
	Puncture and dilatation of tract drainage of ½ liter pus		Recovery	Condition satisfactory 6½ mos later tuberculosis still exists	
		Pneumectomy resection of the 3d rib	Death occurring the night following the operation		
		Resection of 10 cm of 7th and 8th ribs, exploratory pneumotomy, upon opening a series of dilated bronchi were found	Death in one month		Tuber right apex without caviti's, small cavity at base not opened
		Resection of 7 8 cm of 8th and 9th ribs Pneumotomy incision 4 to 5 cm in depth without opening cavity.	Temporary amelioration	Death 3 months later	Disseminated tuberculosis in entire right lung
Pleural adhesions.		Thorocoplasty 5th 6th 7th 8th and 9th ribs resected Pneumotomy	Recovery	Much improved 3 months later	
		Incision in 2d interspace and ant axilla pleural pneumo chorax by attaching parietal to viscera pleura Piece of lung 2 cm in all directions was excised, wound closed without drainage	Patient up 9th day	4 yrs after operation patient was healthy	
No adhesions		Incision and application of a paste of chlorid of zinc in the first intercostal space Pneumotomy after exploratory puncture, resection of 2d rib 10 days later, many small cavities opened	Recovery,	Death 3 yrs later from progress of the tuberculosis	
Adhesions		Thorocoplasty resection of 2d and 3d ribs without opening	Recovery	See foot note	Cicatrized cavity right apex sclerotic lung cavity open'd during 2d operation is recent Sclerosis of left apex
		Incision and resection of 6th rib in axillary line Puncture, discharge of pus containing bacilli lavage, drainage	Death 1 month later		Enorm's sterno-costal cold abscess communicating with the cavity opened by a narrow orifice Right lung almost completely destroyed left lung studded with tubercles
Adhesions present	Puncture at lower dull area negative a 2d puncture at higher and deeper point revealed pus	Pneumotomy U shaped incision 3¼ inches between 7th and 8th ribs and anterior axillary and scapula lines resected pleura opened Pleural cavity shut off with gauze lung incised with cautery to depth of 1 and 1¼ inches 75 cubic cm of thick non fetid pus escaped opening enlarged and cavity swabbed and packed with gauze Gauze removed from pleural cavity skin and muscle flap sutured	Improvement, temperature lowered.		

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[1] Cure maintained 1 year Closure of cavity relapse and reappearance of the signs of cavity in right apex 2d c
and 5th ribs Pneumotomy dressing compression Death 28 days later from emphysema and accidents produced by t

through which to work After the chest has been opened the lung is to be drawn out, transfixed, ligated and amputated with the cautery The cavity should then be drained and only partially closed Tuffier in his operation deviated from this by producing an extra-pleural pneumothorax before opening the parietal pleura, he then divided the pleura and drew the diseased portion out through the opening He closed the wound completely, his patient was about in twelve days He places particular stress upon the advantage of preliminary extra-pleural pneumothorax The pathologic conditions which render this operation necessary are such that at a time most favorable for the performance of the operation the patients will not submit, and when they desire the operation the pathologic changes are so far advanced that they are not in condition to withstand its severity In one attempt at this operation adhesions were found so firm and resisting that the operation had to be abandoned The dangers of separating an adherent apex on the mediastinal side should be borne in mind, 1, the mediastinal septum in front is thin and easily lacerated, 2, there is danger of tearing the azygos veins and the subclavian artery or vein at the extreme apex, 3, lower down there is danger of tearing the right cardiac auricle, this accident happened to me in an operation on the cadaver When the lung is in an advanced stage of tuberculosis its infiltration is so extensive that it is not compressible, and estimates on its removal must be based on the principles governing removal of a solid tumor of equal size I have found when placing the forceps or ligature on the lungs of cadavers in this condition, that many times the tissue lacerated with the pressure It must therefore be understood that the ligature must be placed on the base of the lobe, including only the arteries, veins and bronchi, and that the opening must be sufficiently large to admit of the extraction of a solid mass the size of the lobe to be removed The removal of a complete lung for tuberculosis has not to my knowledge been attempted In advanced tuberculosis the pathologic changes produce insurmountable barriers against the operation of pneumectomy, and while occasional success in partial resection may be achieved it can never become a practical method for the treatment of tuberculosis I believe the trend of surgery in tuberculosis of the lung will be the utilization of surgical means for placing the lung in better condition for repair, as quiesence, compression, drainage, etc, rather than extirpation of the tubercular focus

Hydatid cysts —The surgery of hydatid disease of the lung is well established and exact lines are drawn as to its operative treatment The results have been very flattering to the surgeon It is variously estimated that from 11 to 16 per cent of hydatids of the body occur either in the pleura or in the lung, these situations being the most frequent next to the liver Many of the cases are secondary to disease of the liver, as the following case illustrates

J L, male, aged 46, came under my observation November, 1884 Six weeks previous he complained of a sudden pain in the right side, followed by dyspnea and a dry hacking cough, the distress was severe for three days, a diagnosis of pleurisy had been made and he was placed under medical treatment, when he presented himself at my office the following conditions were found Respirations 36, temperature 99 2 degrees, pulse 110 he complained of great compression in the right side, dulness extended to the spine of the scapula behind and to the second interspace in front, respiratory sounds were absent, there was a bulging of the intercostal spaces and the apex beat was displaced one inch to the left, the liver margin extended one and one half inches below the costal arch The edge of the liver was soft and pliable and of regular anatomic formation

Diagnosis —Hydrothorax, aspiration of a large quantity of clear fluid, *microscopic examination revealed hooklets* Patient had temporary relief, but in three weeks the distress was as great as before, when an operation was advised

Operation —Resection of two inches of the ninth rib in the anterior axillary line, a large quantity of fluid escaped, an opening in the diaphragm could be felt about two and one half inches from the costal margin A perforated drain was inserted through this opening and brought out through the chest wall The patient improved rapidly in his general condition Four weeks later there was a free discharge of bile through the tube The pleural cavity rapidly contracted and at the end of three months there was nothing but a sinus into the liver, which was discharging bile freely, the tube was removed in five months, bile continued to discharge in enormous quantities, the sinus closed nine months from the time of the operation, the patient has remained well up to the present time

In the United States hydatid is infrequent, it is often met with in the Canadian provinces and particularly among the Finlanders (A H Ferguson) The mortality from the disease treated medicinally or without treatment has been variously estimated, Niesser places it at 58 7 per cent, Devaine, $66\frac{2}{3}$ per cent, Thomas, 54 per cent The great majority of cases that recovered without surgical aid ruptured into the bronchi, and a few externally

There are three methods of external treatment 1, puncture, 2, free incision, 3, removal Maydl collected sixteen cases treated by puncture, of which 69 per cent died The dangers of puncture are 1, drowning during operation by opening into bronchus, 2, emphysema, 3, dyspnea from pneumo- and hydrothorax, 4, albuminous edema of the lung The fatal accidents of puncture of hydatids must be borne in mind, and in hydrothorax when hydatid is even suspected exploratory puncture must not be performed, as an incision has no more dangers than puncture in simple hydrothorax and is so very much less dangerous in hydatid cyst, it should be adopted in place of puncture in doubtful cases Puncture with canula is curative in only 25 per cent (Tuffier), as the canula becomes occluded the multiple cysts are not drained, infection takes place and the incision will eventually have to be resorted to Tuffier gives the immediate mortality of puncture with canula as 50 per cent Thomas, 1885, gives the following comparison of results Hydatids of the lung and pleura not interfered with had a mortality of 54 per cent, treated by puncture, 27 per cent, treated by incision and resection, 16 per cent Schwalbe (l c) states that hydatids of the lung without operation have a mortality of 60 per cent Lopez collected thirty-six cases treated by pneumotomy, the mortality was 14 per cent

Suppurating hydatids communicating with the bronchus, if not progressing favorably, should be treated as pulmonary abscesses, opened and drained, after fixation of the lung to the thoracic wall Roswell Park collected thirty-two cases with four deaths, a mortality of 12 5 per cent It is claimed by Tuffier that 90 per cent of the cases recover after pneumotomy

Tumors from 1884 to 1896

Case 1, 1884 Kronlein in Berliner Clin Chir Woch 1884 p 109 and 1886 p 185 Correspblatt Schweitzer Aerzte 1887 xvii p 696 et in Mueller Deutsche Zeith für Chirurg 1893 Vol 67 p 41 Female 18 years Diagnosis sarcoma of lung secondary to costal sarcoma of eight months' standing, in sixth rib left axillary line Operation in thorax pleura incision from second to fifth rib resection of thoracic wall fifth, sixth seventh and eighth ribs being found adherent to tumor once adhesions are separated there is produced an alarming thorax anesthetic had to be stopped Operation on lung extirpatory of secondary sarcomatous nodule the size of a walnut, resection done in healthy pulmonary tissue, lung sutured with catgut drainage of pleural cavity recovery without incidents Results recurrence without scar three years and three months after extirpation and pneumectomy, recurrence six months after in thoracic wall, new operation but no pneumectomy, died seven years after first operation, general metastasis

Case 2, 1887 Sedelot, quot Baldus in 1887, Bown p 16, et Par Mayer mang, dissetato 1889 p 13 Diagnosis sarcoma of lung secondary to sarcoma of thoracic wall Operation in thorax pleura resection of two ribs and all of thoracic wall including pleura Operation on lung resection of portion of lung adherent to thoracic wall Recovery

Case 3, 1893 Mueller Deutsche Zeitsch für Chirurg 1893 Vol 37 p 42 Male Diagnosis chondromo of lung secondary to costal osteo-sarcoma four years base of right lung and anterior portion of thorax from sixth to seventh ribs and from sternum to axillary line Operation in thorax pleura resection of thoracic wall from third to sixth ribs inclusive adhesions of lung to pleura being separated there is produced a complete pneumothorax with cessation of respiration these symptoms ceased on lung being drawn to thoracic wound Operation on lung extirpation of neoplastic nodule double ligature of pulmonary pedicle and suture of lung wound, which measures 9 by 13 cm, drainage of pleural cavity Rapid recovery in three weeks superficial recurrence in scar two years and three months after extirpation, patient is still cured, four years and eight months after first operation

Case 4, 1894 Weinlechner in Mueller Deutsche Chirghief, xl, 2 p 209 in Mueller Deutsche Zeitsch Chirurg, 1895, xlvii, p 41 Diagnosis myxocongroma of lung second to myxocongroma of thoracic wall Operation in thorax pleura resection of three ribs and of all thoracic walls including pleura resection of portion of lung as large as the palm of the hand adherent to tumor, resection of two pulmonary metastatic nodules in inferior lobe Death twenty four hours after Necropsy purulent pleurisy excision of thoracic walls had not allowed union of soft parts

Case 5, 1896 Koenig Berlin Woch, 1896, p 132 Diagnosis sarcomatous nodule secondary to sarcoma of sternum Operation on thorax pleura resection of sternum Operation on lung resection of small sarcomatous nodule without suturing pulmonary wound Died on night *following operation of a pneumothorax!*

Case 6, 1896 Williams quot by Zegari, p 143 Male, 37 years Diagnosis myxocondroma of median lobe of right lung secondary tube costal myxocondroma duration four years from second to seventh ribs in neighborhood of nipple Operation in thorax pleura resection of thorax of third fourth and fifth ribs, pneumothorax, collapse of lung Operation on lung resection of a voluminous nodule of small volume in superior lobe death due to collapse

Actinomycosis of the lung—Actinomycosis of the respiratory organs is next in frequency to actinomycosis of the digestive tract It may appear as a primary lesion of the lung, or the lung may be secondarily attacked from an actinomycosis of the bony framework of the chest or from an actinomycosis penetrating the diaphragm A detail of the history of the disease, while it might be very interesting, will not be considered here Langenbeck in 1845 first described the disease Ponfick, Israel and Bollinger made a very extensive study of the subject Israel collected nine cases of actinomycosis of the air passages When it occurs primarily in the lung it may have been inhaled When the lung is infected the tendency is to a rapid infiltration and extension of the disease It is not so likely to be overlooked now as in former years, the sputum of every patient with chronic pulmonary lesions is repeatedly examined, and while the ray fungi are not sought, they are not often overlooked The medical treatment of actinomycosis is becoming more satisfactory as time advances, iodid of potassium has proved most useful We find in the literature a number of cases in which it was used with curative effect, it should be administered in increasing doses until iodism is produced This is now being supplemented by the internal use and external application of nitrate of silver, suggested by Dr Poore (Paget) He bases his recommendation on his experience in one case of actinomycosis of the right pleura and the specific fatal effect of nitrate of silver upon the aspergillus niger noted by Raullins, one part in a million and a half in culture media would prohibit the growth of the latter When the lung is infected with actinomycosis it produces no specific symptoms in its early stage, later the chest wall is attacked and external sinuses may develop, when the true character of the lung lesion can be readily recognized if it has not already been detected in the sputum If treated surgically the indication is a radical extirpation of the disease, if this can not be accomplished, careful and thorough curettement and packing with a nitrate of silver gauze is indicated Godlee favors radical surgical treatment when iodid of potassium has failed, and while I agree with him in this *dernier ressort*, from my experience with surgical treatment of actinomycosis in other parts of the body, I would consider that the lung is a very unpromising field for surgical treatment A very interesting case was reported by Dr Karewski at the recent meeting of the Berlin Medical Society[78]. Fraenkel made the diagnosis from the physical appearance without the aid of the microscope, extensive resection of the ribs and chest wall was made, the patient recovered and only a small sinus remained

Dermoid cysts will not be considered in this article, as they are always mediastinal tumors and not true tumors of the lung, although they frequently rupture into the trachea or bronchi and their contents are expectorated (see Clotta's case, also a very interesting case reported by Dr Ogle,[79] another by Rickman J Godlee)[80] These tumors are all of mediastinal origin (Bland Sutton)

Neoplasms of the chest wall and lung requiring pneumectomy—Of the neoplasms occurring primarily in the chest wall and involving secondarily the pleura and lung we may mention, 1, the sarcomata of the ribs and sternum, 2, the enchondromata (varieties), 3, the carcinomata, occurring first in the mammary gland, and involving the muscle, bone and pleura of the chest wall by continuity of the process or by secondary glandular infection The following tumors in the lungs are pathologic curiosities Fibromata, lipomata, angiomata, dermoids (Clotta) and gummata of the chest wall When these neoplasms invade the pleura, adhesions are not infrequently formed, the lung may also be involved at the time of operation, necessitating excision of a greater or lesser portion of it with the tumor Primary malignant neoplasms of the lung are rare, secondary involvement of the lung by carcinoma and sarcoma is not uncommon Wilson Fox, who collected 112 cases of tumors, showed that the disease was primary in 38, secondary in 64 and indetermined in 10 Primary cancerous growths usually originate in the mucous glands, and as these are lined with cylinder cells they are frequently cylindrical epithelioma An alveolus may be the initial seat of the disease Primary sarcoma may occur in the lung and is usually of the round-celled variety, spindle-celled and myeloid growths have been observed, they very closely resemble aneurysm and the greatest care must be exercised in making a differential diagnosis In many cases it is difficult to say whether the malignant disease is primary or secondary in the lung, the surgeon is rarely called upon to operate on these cases, as they are not diagnosed The class of malignant disorders of the lung which comes to the surgeon for operation is that in which the disease is secondary to disease of the chest wall This leads us to the consideration of the subject of pneumectomy in general

Pneumectomy was performed first for the cure of hernia of the lung, one case was published by Rolandus, 1492 The cases of amputation of a protruding lung do not clinically come under the heading of pneumectomy, as they do not involve the dangers and difficulties of technique associated with intra-thoracic pneumectomy The first pneumectomy was made by Péan in 1861, he was resecting a tumor involving the third, fourth and fifth ribs, the pleural cavity was opened, the ribs mentioned excised and the lung was found adherent and involved in the tumor The visceral and parietal pleuræ were sutured and the Paquelin cautery was used to remove the diseased portion of the lung The first scientific experimental investigation was made by Gluck, 1881 (l c) He performed pneumectomy on 6 dogs and 14 rabbits, two of the latter lived for three months, all of the dogs died, in one, in which he ligated the stump of the lung without a pneumectomy, he found that the portion of the lung on the distal side of the ligature did not mummify, but lived There was primary union of the vessels There was always immediate cyanosis after the operation He arrived at the following conclusions Ligature with pneumectomy is tolerated well by rabbits, if the operation be aseptically and well performed recovery is permanent, primary adhesion of vessels takes place, no cardiac thrombosis, the stump lives and forms part of the cicatrix, the fatality is caused by pneumothorax, pericarditis, infective pleurisy of the same and opposite sides Milton Antony[81] of Augusta, Ga , reports that in 1821 he was called to a patient in the western frontier suffering from a growth of the lung pressing out the fifth and sixth ribs He made a resection of these, scooped out the degenerated tissue or tumor of the lung and plugged the cavity, the patient recovered While this case antedates Péan's it should not be considered a pneumectomy From his report there is some doubt that any lung tissue was removed, as the patient had no cough nor expectoration and there was no mention made of air escaping through the wound Be that as it may, he deserves credit for having suggested and practiced sub-periosteal resection of the rib to allow the wall of the chest to fall in and fill the space, an operation which subsequently added much to the fame of Estlander and Schéde Marcus, in 1881, removed one entire lung from two dogs and three rabbits One dog died from the anesthetic, the other from purulent pleurisy, the rabbits died on the third, sixth and twenty-seventh days respectively These experiments were rapidly followed by those of Hans Schmid,[82] which were made independent of a knowledge of Gluck's He used morphin and ether for narcosis, hemostasis of the excised portion was secured by transfixion and ligation with catgut, he made exact suture of the edges In eight partial resections in dogs there were five deaths and three recoveries, the deaths were caused in four by suppurative pleuritis, in one by carbolic acid poisoning In partial resections a V-shaped incision was made with accurate suture of edge He removed both apices successfully in the same dog, six weeks intervening between the operations, there was no secondary hemorrhage he expressed the belief that partial excision was applicable to local tuberculosis, injuries, abscesses and tumors of the lung and rib

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[78] Allgem Med Centr Zeit Vol xxiii, 298.

[79] Medical Week, Paris, March 5

[80] Ibid

In May, 1881, Bloch performed nine experiments for the removal of the lung on five rabbits and four dogs, all of the former died immediately after the operation one of the latter lived fourteen days, the other dogs all died shortly after the operation In July 1881, he performed sixteen experiments with resection of the rib on rabbits, all died a few days after from hemorrhagic pleurisy the time required for operation was forty-five minutes He changed his method to an intercostal incision with the removal of single lobes and reduced his time to ten minutes With this method two dogs recovered, one from a lower and the other from a middle lobe amputation, when the dogs were killed no pneumothorax, exudate, nor displacement of organs was found He noted the anatomic communications of both pleural cavities in some dogs, all with this communication terminated fatally, he advised against drainage He removed infiltrated lobes through intercostal spaces and favored that plan very much[83] Bloch's experiments were very discouraging, but the profession was soon relieved from their depressing effect by the more extensive, scientific and fruitful researches of Biondi which carried the profession too far in the opposite direction In 1882 Biondi made the following experiments Extirpation of right lung, healthy animals, 23 experiments, 12 recoveries, extirpation of left lung, healthy animals, 34, 18 recoveries, extirpation of both apices, 3 experiments, 3 recoveries, middle lobe, 1 1 recovery[84] His experiments were exact as to details and his results were the best obtained He found that the great majority of animals infected artificially with tuberculosis in the lung and not treated died of the tuberculosis, on the other hand, he found that a timely resection of the apex of the lung saved a goodly number The success of these experiments stimulated surgeons to operations for removal of the lung Zakharwitch made a minute study of the technique of these operations experimentally on cadavers and on animals His results almost equalled those of Biondi He laid down definite rules for pneumectomy W LeMoyne Wills[85] reports some very interesting and instructive experiments of pneumotomy and pneumectomy

Weinlechner, in 1882, removed three ribs for malignant disease and excised two nodules from the lung, the opening in the pleura was so large that he found it impossible to obtain a sufficient flap to cover it, closed with packing, patient died in twenty-four hours from acute pleuritis

Kroenlein, in 1884, operated on two cases, one ended fatally a few hours after operation and the other lived but a few days Ruggi, in 1885, performed two operations, in one he succeeded in removing the apex, and the patient died on the ninth day from carbolic acid poisoning, in the other he found it impossible to detach the lung from the pleura, the patient died thirty-six hours after the attempt

Sedillot, in 1887, removed a portion of a lung which was adherent to and involved in a sarcoma of the chest wall Patient recovered W Miller, 1888, removed a portion of lung and chest wall successfully for enchondroma

In 1891 Tuffier removed successfully a tubercular nodule from the apex of the right lung He first separated the parietal pleura from the ribs all around the field of operation, when this was accomplished he palpated the tumor, divided the pleura, grasped the lung with the forceps and drew it out through the slit in the pleura, producing a hernia of the lung A tubercular nodule the size of a hazel-nut was excised and the lung was allowed to drop back The incision was completely closed, the patient was reported well four years later This was certainly an ideal case for excision

D Lowson, 1893, excised the apex of the right lung for tuberculosis He made an angular incision and resected the second and third ribs A small opening was made in the pleura, he filled the pleural cavity with sterilized air to force collapse of the lung This caused no dyspnea or cyanosis he then opened the pleura, freed the adhesions and brought the lung out through the fissure, transfixed it, ligated and exsected the infiltrated portion, he replaced the lung and closed the chest cavity without drain It had to be opened two weeks later for the removal of some pus and blood, the patient was discharged from the hospital in eighty days, she had gained rapidly in flesh and the wall was closed to a small sinus This operation shows the most praiseworthy preparation and execution, and the result was well deserved

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[81] Phil Med Jour 1823 p 108

[82] Berlin Med Woch No 57 Dec 1881

[83] Deutsch Med Woch Berlin 1881 vii p 634

[84] Glor Internaz d Sc Med Napoli, 1882 N S iv, 759 1883 N S

[85] Southern Calif Prac Los Angeles 1892 vii 167

These operations were rapidly followed by those of Miller, Kœnig, Mikulicz, Albert, Tillmanns and others, but the hope of success that was born from the results of Biondi's experiments has never been realized In 1887 Roswell Park, in an able article, reviewed the cases treated up to that time E Willys Andrews[86] advocates removal of upper lobe of lung, and has confidence in its success, he emphasizes the dangers and difficulties caused by adhesions, he believes large incision in the axillary line is most advantageous for operation Pneumectomy for primary tumor of the lung has never been performed Schlepfer collected 16 cases of enchondroma in which the chest was opened, with 8 recoveries and 8 deaths Tillmanns considers that the greatest danger in the removal of these tumors is in the opening of the pleura and mediastinum, not from the pneumothorax but from the infection of the pleura Terrier advises the free opening of the pleura, regardless of the pneumothorax, for the excision of these tumors For hernia he favors the reduction without rib resection

My experiments were made to familiarize myself with the technique and feasibility of the various operations, the manipulation and exposure for observation of certain phenomena were excessive and were not conducive to the recovery of the animals The following is the report on pneumectomy

Experiment 2 —Oct. 24, 1897 small brown dog, ether anesthesia, the same antiseptic precautions were used as in experiment 1 Osteoplastic resection of fourth and fifth ribs of right side was made, parietal pleura retained on flap, action of mediastinal septum observed as in experiment 1 Lower lobe of right lung was brought out through and plugged the opening, this relieved all respiratory difficulty, the lobe was transfixed, ligated with heavy silk and two thirds of the lobe excised, there was no hemorrhage and the lung was returned, a subcutaneous buried suture of catgut entirely closed the wound, time consumed in operation, twenty one minutes By a mistake in orders the dog received nothing but water for three days, when the error was discovered he was very weak, he died on October 29, five days after the operation

Postmortem.—Perfect primary healing of external wound had taken place, there was a slight edema of deep tissues, periosteal flap in good position, on opening the pleural cavity the lung was found to be entirely free from adhesions, the pleural cavity contained no pus or serous fluid, the ligature was in position, pressure necrosis had liberated a small portion of the lung on the side nearest the base, there was no odor from the stump, the remaining one third of the lobe was normal, there was no pneumonic infiltration, thrombosis had not advanced in the ligated arteries or veins, the bronchi were closed, there was no pericarditis or pleuritis on the opposite side, there was no pathologic cause of death and it was probably due to the error in orders mentioned

Experiment 3 —Oct 24, 1897, small black dog, ether anesthesia, an osteoplastic flap of second and third ribs on right side was made, movements of mediastinal septum observed as in previous experiments, the septum was thicker than in the last dog, there was marked cyanosis after opening the pleura, when the hilum of the lung was grasped with forceps so as to prevent the vibration of the septum respirations were rapid, but the cyanosis and collapse disappeared, the upper lobe was drawn out through the opening and ligated at the hilum en masse with silk ligature, the wound was closed with catgut as before, time consumed in operation, sixteen minutes The dog left the operating table in good condition but became quite sick the same evening, and continued so until death forty eight hours after operation

Postmortem —Accumulation of pus present between skin and osteoplastic flap, the latter was held fairly well in position by sutures, the pleural cavity was found full of sero purulent fluid, numerous adhesions had formed between the diaphragm and the parietal wall, the lower lobe was partially consolidated with pneumonia, ligature was buried in exudation, pleuritis on left side, pericardium free from inflammation

Experiment 4 —Nov 8, 1897, small black dog, weight about thirty eight pounds A U shaped incision with resection of one and one half inches of the fourth rib on right side was made, osteoplastic flap, the lung was immediately drawn out and three lobes ligated at hilum with catgut without transfixion The opening in the chest was closed by a deep catgut suture and a continuous silkworm gut cutaneous suture, time for operation, twelve minutes, November 9 dog in good condition, November 10 dog in good condition, wound looks well, November 11 dog playful but breathing rapidly, November 12 dog in excellent condition, the silkworm gut suture had been bitten out and there was a slight gaping of the flap, air entered and escaped through the skin wound in small quantity, it is believed that this passed in and out of a subcutaneous cavity only and that the pleura was still closed, November 20, dog in good condition, external wound almost closed, no air passing through the opening, the dog became fat and appeared to suffer no discomfort except a slight increase in frequency of respirations, he was killed on March 14, eighteen weeks after the operation

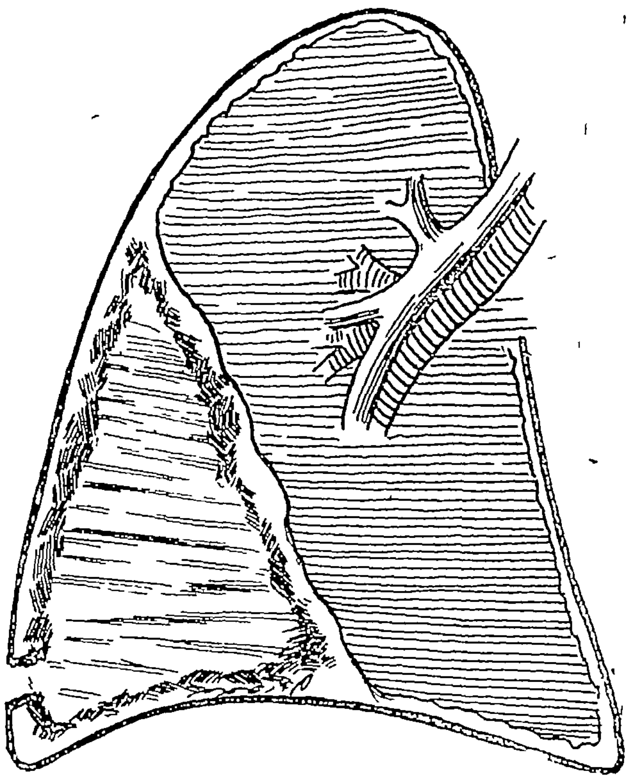

Fig 20a —*Shows empyemic cavity after partial contraction has taken place following drainage*

Postmortem —A heavy clamp was placed on the trachea to prevent collapse of the lung when the chest was opened, the organs were thus retained in the same position as during life, the external wound had cicatrized and contracted, there was a defect in the bony thoracic wall about one inch in diameter where the rib had been resected, the edges of this defect were covered with shreds of connective tissue the ends of the rib were smooth and covered with connective tissue The thyroid gland was much enlarged, the right pleural cavity was small and had in it a few drams of serous fluid, the heart and mediastinal contents were displaced markedly to the [illegible] ht the delicate mediastinal septum was intact, the pul [illegible] could not be recognized, a mass of connective [illegible] glistening, about the size [illegible] hen' [illegible], occupi location Shreds of adhesive bands existed between the diaphragm and chest wall, a few vascular villous shreds projected from the pleural surfaces in various places, the left pleura was smooth and non adherent, pericardium was normal The esophagus, larynx, thyroid, trachea, heart, entire left lung, the lower lobe of the right, the anterior thoracic wall and the diaphragm were removed en masse and submitted to Dr W A Evans for pathologic examination, report of which is as follows The right side of the diaphragm was elevated and attached to the mediastinum and the chest wall A line drawn through the center of the trachea and continued downward passes through the center of the heart, cleaving its tip exactly in the middle The entire heart had been drawn to the right, but the most marked displacement was in the swinging of the tip with the base fixed The sternum was bent to the right, as shown in the diagram (Fig 20 b) outlines for which were measured The bend was most marked at the fourth rib Two cm to the right of the sternum and 13 cm above its tip is an opening 4 5 cm long, by 2 cm wide This opening is covered by a flap in which is a piece of rib 2 5 cm long, this piece is entirely separated from other bony structure The space between the ragged ends of the rib and this piece is scant 3 cm, all of the surfaces of these pieces show slight nodular periosteal thickening The soft tissue flap which contains this piece of bone bellows out into a hernial sac, measuring approximately 5 cm across and 4 cm in height Its internal surface is smooth and glistening except for bands of yellow colored fibrous tissue which run here and there, these blend into the connective tissue of the wall

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[86] Chicago Med Recorder 1892 p 537

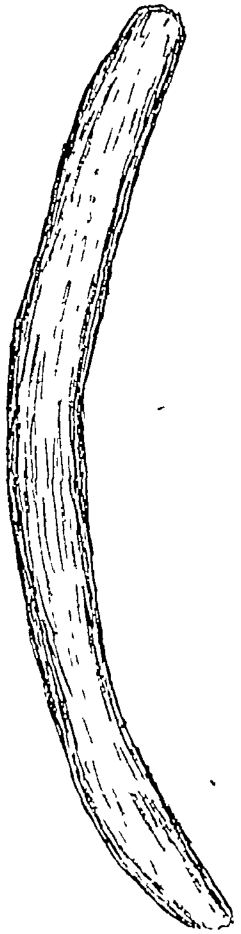

Fig 20 —Deviation curve in sternum Experiment 4

Left lung The lowest lobe is large, fully expanded and has no adhesions to the wall, the middle lobe also no adhesions to the wall, these two lobes are bound together by firm adhesions Upper lobe, this measures 6x4½x4 cm, is heart shaped, and is covered by firm, thick pleura 3 to 5 cm in thickness The pleura has a smooth glistening surface There are no pleuritic adhesions The bands of fibrous tissue in this lung run parallel to its surface The outer layers of the pleura are the densest The upper lobe of the lung is not attached to the others The appearance of this lobe is that of a cyst. The bronchial tubes are patulous to the smallest The lung substance is firmly compressed

Right lung *The upper lobes* of this lung are gone A stump containing a small amount of lung is to be seen (See Figs 21 and 22) This was excised for microscopic examination The lower lobe has attachments to the diaphragm which are hard and ligamentous Its attachments to the pericardium and to the mediastinum are equally as firm The pleura measures 3 to 5 cm in thickness, and is firm and dense on its outer surface, is free except at the attachments noted On incision the lung substance is firmly compressed and the bronchioles are patulous

Microscopic examination of the stump of the upper lobe shows the following The end of the bronchus is plugged with fibrous tissue, the bands of which run in every direction In this mass of tissue are a few bronchial glands Besides this there is no trace of epithelium The connective tissue has grown from the mucosa and the inner fibrous coat The islands of cartilage run in every direction, but the general disposition is to form a triangle The cartilage plates do not show degeneration phenomena The vessel wall interior to the inner elastic lamina is thicker than the balance of the wall The fibers of the wall all run in the same direction The blood vessels are closed by growths of connective tissue which are mostly inside of the inner elastic lamina Sections from higher up in the bronchial tree show a small lumen with the mucosa thrown into the usual folds The epithelium is falling away and much of it is loose in the lumen

This detailed report is submitted to show the histology of the closure of the vessels and bronchus of the stump, it will be noted that this dog had three lobes in his left lung, and while we had removed three on the right side there was still another left, showing an anomaly of development Quénu observed that the dog's lung is occasionally divided into as many as six distinct lobes by fissures extending to the hilum

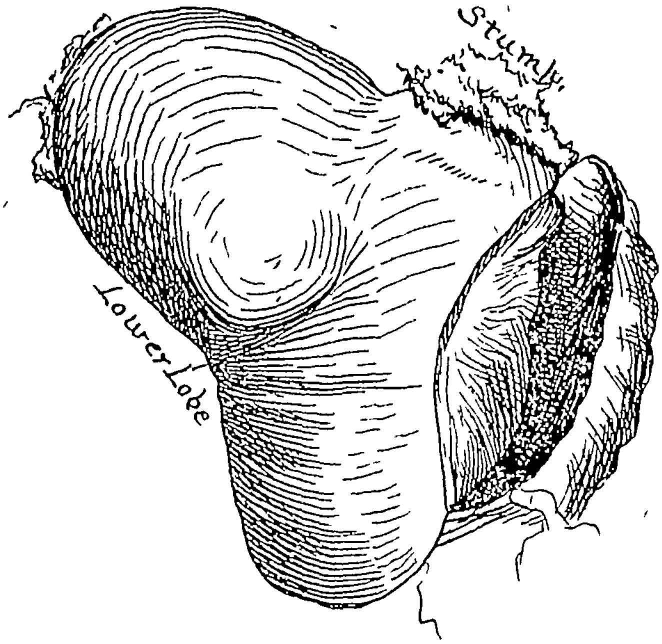

Fig 21 —Right lower lobe and stump

Experiment 5 —Nov 8, 1897, large black and white dog, thorax opened on right side, as in previous operations, the mediastinum ruptured and the dog ceased to breathe, after the lungs had collapsed the chest was compressed and the aperture closed with the hand, then the dog began to breathe but with considerable difficulty, on account of rupture of the mediastinum no further attempt was made at operation, the chest was compressed and the muscular flap rapidly closed over the opening with a firm catgut suture and buried catgut subcutaneous suture November 9, dog in fair condition, November 10, dog sick, breathing rapidly, November 11, dog died

Postmortem—incision in chest wall adhered per primum, right lung was collapsed, left lung was dilated apparently to normal size, it was slightly emphysematous, there were a number of hemorrhagic patches in the lower lobe, no evidence of hemorrhage or suppuration, cause of death could not be ascertained, but I believe it was due to the rupture of the mediastinum, which impaired his respiration after the closure of the chest

Experiment 6 —Nov 25, 1887, large white bull dog, there was the usual preparation and anesthetic, incision was made the same as in previous experiments, the entire right lung was drawn out through the opening, there was considerable pressure on the hilum to produce this result, a catgut ligature was thrown completely around the hilum, the lung was excised and the stump sutured with catgut in the opening close to the sternal border, there was considerable tension on the stump, time of operation, twenty minutes I had hoped by this method to produce an extra pleural treatment of the stump, but in the dog I could not use the hysterectomy retention needles to hold the stump extra thoracic, the external wound was closed with buried catgut suture, November 26, dog was very sick, on the morning of the 27th he was found dead

Postmortem—Incision firmly agglutinated, the stump of lung was found partially adherent in the incision, there was some blood in the pleural cavity, and a septic pleuritis on both sides, the catgut ligature on the stump had given way

The difficulty encountered in this case in drawing the stump of the lung forward for extra pleural treatment should not be experienced in the human, as the longest diameter in the dog is the antero posterior, while in the human it is the shortest

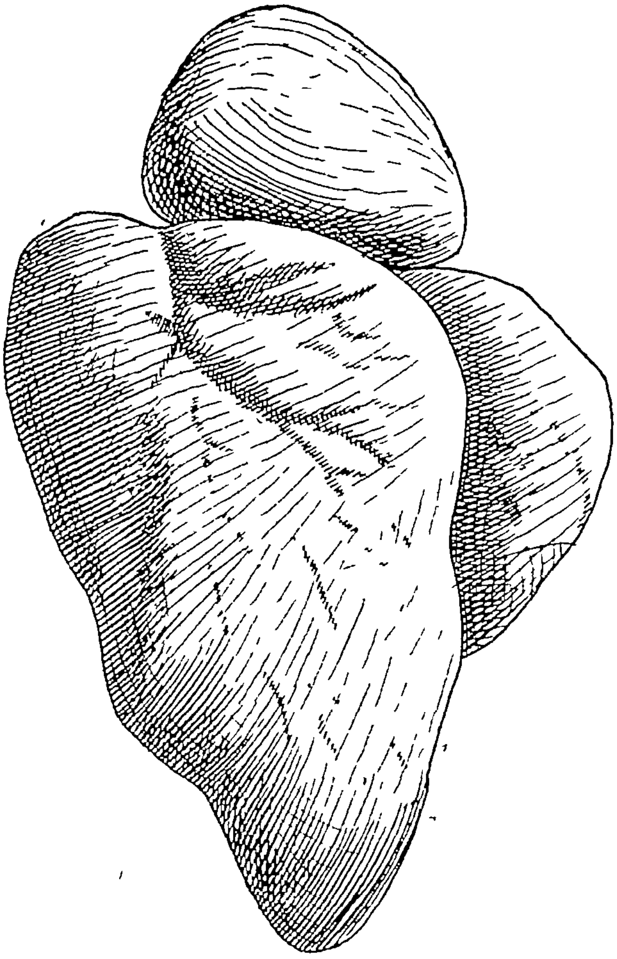

Fig 22.—Posterior view of lobe and stump

In the cadaver I found it easy to draw the lung out through an opening on the side of the sternum, and believe that in pneumectomy the stump can be treated in this position, it appears from the results in pneumectomy for pulmonary hernia that this treatment of the stump will be the most favorable

Experiment 7—Nov 25, 1897, small black dog, resection of third rib, right side, osteoplastic flap was made, ligation of the hilum of the entire lung above the bifurcation of the large bronchus, stump top sewed I endeavored to secure a pleuritic flap from the mediastinum and chest wall to cover the stump, but did not succeed, the chest was closed as in previous cases, an aspirating needle was then inserted into the right side and the air in the chest cavity pumped out for the purpose of drawing the mediastinal septum to the side operated, and assisting the expansion of the left lung, this improved the dog's respiration materially, time consumed in operation, thirty minutes, the dog when removed from the table was in poor condition, November 26, dog improving, November 27, in fair condition, November 28, not so well, drowsy, November 29, very sick, November 30, dog died

Postmortem—Incision healed per primum, when the pleural cavity was opened air entered with considerable force, there was no bad odor, point of ligation presented a hard nodule of granulation tissue which seemed to be aseptic, the bronchus was closed, left pleural cavity normal, pericardium normal, examination of specimen showed closure of artery and vein with small clot near point of ligature, mucous surface of bronchus granulating, cartilage unchanged, cause of death not ascertained

Experiment 8—March 26, 1898, large female dog, an osteoplastic flap of second and third ribs was made, two upper lobes of right lung were ligated at base with chromicized catgut and excised, the stump was covered by suturing the base of the lower lobe over with chromicized catgut to form a cap, this left no abraded surface within the pleura, the dog died on the third day

Postmortem was made fifteen hours after death, external wound found clean, there was emphysema of chest wall in neighborhood of wound with slight discharge of sero sanguinous fluid through deep line of sutures, right pleural cavity contained about 500 c c of fluid blood with few coagula which were adherent to the stump, the stump was found in good condition, the lower lobe covering about two thirds of it, the ligatures were in position, the entire parietal and the remaining portion of the visceral pleuræ were covered with a thick, hemorrhagic membrane, when this was peeled off the underlying pleura was injected but smooth and glossy, heart normal, pericardium and pleura of opposite side normal Cause of death, septic pleuritis

Experiment 9—April 24, large female dog, 45 pounds, ether anesthesia, an osteoplastic flap of four inches of fifth rib (right) was elevated This rib I find is the best to resect in dogs, as it permits easy access to the hilum of the lung, on the admission of air respiration ceased, the thin mediastinal septum flapped to and fro and soon became emphysematous from the admission of air between its layers, for two minutes the respiratory efforts continued and then suddenly subsided, the heart continued its regular action, the right lung collapsed, contracted around its hilum and the diaphragm receded, the entire lung was grasped with the fingers and drawn out through the opening as soon as it plugged the orifice the dog began a rapid gasping respiratory movement which soon became regular and full, the upper and middle lobes were separated from the lower, ligated at the base with chromicised catgut and excised, with three continuous catgut stitches the base of the remaining lobe was sewed over the stump of the excised lobes, forming a cap or covering, the stump was allowed to recede into the chest, there was no hemorrhage, the mediastinal septum was now very emphysematous and bulged greatly to the left side, the left lung could be seen through the delicate septum, a deep row of catgut sutures approximated the muscle wall and pleura and a superficial buried subdermal catgut suture approximated the skin, I used the buried suture as I found it would materially lessen the danger of superficial wound infection, an aspirating needle was then introduced into the fourth interspace and the air aspirated from the right side, this was for the purpose of re expanding the lower lobe of the right lung and putting the mediastinal septum on tension so as to aid the respiration of the left lung April 25, the dog had been very quiet and apparently comfortable, she took her food freely this morning, her respirations were, however, rapid, in the evening her respirations were still more rapid but she partook of food, April 26, dog panting and very sick, died at 9 o'clock A M

Postmortem.—There was primary adhesion of skin and muscle, when the chest wall was opened there was neither entrance nor exit of air, thirty four ounces of fluid, sero sanguinolent, flowed out of the wound, on the left side there was a sero purulent pleurisy with edema of the lung, the lung was greatly compressed, the mediastinal septum bulged far to the left of the median line, the right pleura was covered with a fibrinous exudate about one-eighth of an inch in thickness, it was divided into many compartments by trabeculæ of this material extending from the mediastinal septum to the chest wall, lower lobe of right lung collapsed and hidden from view by the fibrinous exudate, the stump was completely covered by the adherent lobe, the death was caused by the large accumulation of fluid shutting off her respiration, there had been no hemorrhage

Experiment 10—May 1, 1898, large male dog difficult to anesthetize, when finally overcome was very cyanotic, respired feebly, when the chest was opened respiration ceased, artificial respiration resorted to with no effect, the heart ceased to beat, tracheotomy was then performed and a rubber drainage tube inserted into the trachea, the upper air passages were closed, the lung could be easily made to expand and protrude many inches through the opening, illustrating beautifully the practical application of Tuffier's method of artificial respiration, it was however too late for restoration

It was my intention before publishing these experiments to produce a number of herniæ of the lung subcutaneously and later amputate the protruding portions, but time did not permit This should from clinical experience, be the most favorable method of pneumectomy as Coubey collected fourteen cases of hernia treated by pneumectomy, with twelve recoveries

I wish to express my appreciation and thanks to Drs W A Evans and George W Johnson for the assistance rendered me in this work

SELECTION

Suture of the Patella.—Macdonald (*Medical News* for July 30) describes a method of treatment of the fracture of the patella, for which he claims uniformly good results, shortened convalescence, freedom from the dangers of sepsis, simplicity, continuance of the encysted silver wire suture, maintaining position of the fragments, and bony union possible in all He describes his method as follows "After the usual preparations to secure asepsis have been completed, the limb is fully extended, the surgeon draws the lower fragment of the patella as high as possible, enters the point of the scalpel close to the apex of the bone, and carries it directly inward and upward through the ligamentum patellæ into the synovial sac above the ligamentum mucosum The scalpel is now withdrawn, leaving a puncture of the joint at its dependent part one half of an inch in length This puncture is now covered with sterilized absorbent gauze, and by massage and flexion the joint is practically emptied of effusion through the puncture Should any difficulty be experienced in removing the effusion, always fluid for several hours after the injury, the metal cannula may be introduced to facilitate the flow After the removal of the fluid, the fragments can usually be brought in apposition By a little coaxing, bits of membrane or bursa can be removed from between the fragments, and distinct bone crepitus obtained. An assistant now holds the fragments The point of the needle is introduced into the puncture close to the apex of the patella, carried through its tendon laterally, through the aponeurosis at the side into the tendon of the extensor femoris, keeping close to the patella all the time, and is made to present underneath the skin A touch with the scalpel permits the point of the needle to be reached, and one loop of silk withdrawn The needle is then removed, and another loop passed in a similar manner on the opposite side By means of these two loops of silk the silver wire is drawn into position The relation of the fragments is now re examined to determine the absence of tissues between them, and that no tilting exists When properly adjusted they are steadied by an assistant, while the surgeon, by strong traction on the silver wire, using forceps on each end, buries it in the tissues around the patella and twists it close to the apex The wire is cut short and buried in the wound If the process has been carefully followed the fragments will be found in absolute approximation, surrounded and supported by this suture or subcutaneous splint " After dressing the limb in plaster of Paris, "the patient is kept in bed with the foot elevated, for a week, and carefully watched for any reaction Afterward he is allowed to sit up, and after two weeks go about on crutches The dressing is removed at the end of six weeks, and a molded posterior splint adjusted At the end of twelve weeks all dressings are removed and full use of the limb allowed "

PRACTICAL NOTES

Gangrenous Phlegmons are arrested at once and cured with injections of antidiphtheria serum, according to the experience of Dr E Monti in thirty one cases at Pavia His previous mortality had been from 45 to 80 per cent —*Semaine Méd* , July 6

Sero diagnosis of Tuberculous Effusions —Courmont has found that the serous fluid from local tuberculous lesions has a pronounced bactericidal and agglutinating power (17 out of 18 cases), while the fluid from non tuberculous lesions of the kind has none (6 cases) —*Presse Méd* , June 11

Calcium Carbid in Carcinoma —In the *Kansas Medical Journal* of July 9, Leslie reports two cases of carcinoma of the cervix with calcium carbid (*vide* JOURNAL, July 9, 1898, pp 63-68), and one case of carcinoma of both cervix and vagina with calcium carbid and Coley's mixture

To Disinfect the Stools in Contagious Diseases the following mixture is very highly recommended zinc sulphate, 100 grams; sulphuric acid, 5 to 10 grams, nitrobenzol, 2 centigrams and 15 centigrams indigo Five grams in a vessel before using will prevent any odor and putrefaction for twenty-four hours —*Progrès Méd* , June 25

Early Diagnosis of Pregnancy —G Reusner supplements Noble's two signs (contrast between the enlarged uterus and small neck and sensation of partial fluctuation) by calling attention to the characteristic pulsation of the lateral uterine arteries in the posterior vaginal vault The pulsation is so strong and distinct with commencing pregnancy that he establishes his diagnosis upon it as early as the fourth week. It resembles the pulse near inflammatory processes —*St Petersburg Med, Woch* , June 25

Nervous Pseudo Appendicitis proceeds from the ovary or neuralgia of the twelfth intercostal nerve, in hysterics with exaggerated reactions The anterior perforating point of this nerve simulates McBurney's point, but the two other points, vertebral and lateral, confirm the hysteric stigmata It is curable by therapeutic suggestion A case is described in the *Presse Med* , of June 4, a young man who was laparotomized twice and a macroscopically sound appendix removed, returned with the same syndrome of appendicitis for the third time

Modern Treatment of Burns Absorbent Compresses.—The *Semaine Méd* of June 15, calls attention to the following simple and effective treatment of burns, employed by C Calliano of Turin, with which he has been very successful and which corresponds to the latest theories in regard to burns and intoxications The part is first cleansed with cold sterile water or a weak antiseptic, using vinegar water for a burn from lime and slightly soapy water in case of corrosion from a mineral acid, after which cold compresses are applied, renewing or moistening with fresh cold water every fifteen minutes These cold applications relieve the pain at once and abolish it completely in twelve to fifteen hours, after which a compress of sterile gauze or clean cloth is dipped in boricated water at 40 degrees C and wrung out until only slightly moist but still hot and absorbent, and applied to the burn with an air tight covering If there is suppuration this hot compress should be renewed twice a day, cleansing the parts with a stream of boricated water under gentle pressure If the skin is very red and painful he applies the salve lead carbonate and lead oxid *aa* 2 grams in 15 grams vaselin, or this liniment limewater, 100 grams, linseed oil, 50 grams, and thymol, 1 gram As suppuration diminishes, smaller and lighter compresses are applied The patient must remain in bed during the entire time of treatment to avoid pressure on the wound, and the part must be raised if possible to favor the reflux of venus blood Simple diuretics and saline purgatives should be given to promote the elimination of the toxins If there are evidences of autointoxication, inject a tenth of a milligram of atropin or a centigram of extract of belladonna, watching the pupils, or else some simple tonic The urine should be watched, and if the albuminuria increases, showing progressing auto intoxication, injections of physiologic salt solution are required

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SATURDAY, AUGUST 13, 1898

HEMOGLOBIN ESTIMATION AND ITS PROGNOSTIC VALUE

The amount of hemoglobin, estimated upon a percentage basis, is the true index to the richness of the blood Other ingredients, notably albumin, may aid somewhat, but while the latter may be increased in the blood of fairly healthy subjects with considerable rapidity, hemoglobin increase is comparatively slow, and for that reason is a better indicator, regardless of the time of examination Another point we can, as a clinical test, quickly determine hemoglobin percentage, while with the remaining blood ingredients a well-equipped laboratory becomes a necessity for such work The count of the number of red corpuscles, aside from the specific diseases of the blood itself, can not be regarded as of such value as formerly, for instance, in neurasthenic states, it has lately been demonstrated that counts of six or seven millions per cubic centimeter are not infrequent, yet the physical condition of the patient, together with his hemoglobin, is below par The determination of hemoglobin is of little value from a prognostic standpoint in the various blood affections proper, but in the simple anemias, from whatever cause, it possesses decided importance It is the consideration of these latter states that we propose to take up here

In very few diseases, if any, does anemia occur with such rapidity as in malarial fevers Nor is this a matter of surprise when we reflect upon the enormous number of spores set free with each paroxysm Many of these spores penetrate a red corpuscle, and eventually the result is a destruction of their hosts The hemoglobin is transferred during the growth of the parasites into minute pigment granules, and these latter are disposed of in various ways, some are deposited in the solid organs, notably the liver and spleen, others become changed into urinary and bile pigments, and as such are for the most part thrown off from the system The effect of this would become almost a mathematical problem were it not that other factors come into play Many of the organisms fail to mature extracorpuscular parasites, many are destroyed before sporulation, immense numbers are taken up by the leucocytes in the spore stage Were it not for these facts an attack of malaria would invariably be attended with fatal results after a few paroxysms With the exhibition of quinin, the majority of cases (the intermittents at any rate) become not cured but convalescent, and the problem now changes to that of improving the nutrition, in other words the abolition of an anemia necessarily present The usual tonic treatment, iron, quinin, strychnia, Fowler's solution, is instituted, and it becomes necessary to note the effect, if any, of our drugs, especially iron, that the dosage may be regulated and the patient not given more than can be utilized This can be best done and in a truly scientific manner by determining the hemoglobin percentage It need not be done oftener than once a week, and even a slight increase during that time will show to the physician that his patient is progressing in the right direction The estimation is easily and quickly made with the hemometer of Fleischl, but where that instrument is not available another simple and exact method can be substituted This method of Hammerschlag, as it is called, depends for its working principle on the difference in specific gravity of two fluids, the one heavy and the other light, neither of which will mix with fresh blood Chloroform and benzol are the ones usually employed They are thoroughly mixed in sufficient quantities of each to make the united specific gravity 1059, that of the normal blood A drop of blood is allowed to fall into this mixture, which has been poured into a wide-mouthed test tube As said before, the blood will not mix with either of the two fluids, and if the specific gravity of the blood is less than that of the mixture the drop will float Benzol must then be added until the blood remains stationary in the surrounding medium If the drop sinks, add chloroform until it rises and becomes stationary as before The specific gravity of the mixture when the drop becomes stationary indicates the specific gravity of the blood under inspection The specific gravity of the blood bears a definite parallel ratio to the amount of hemoglobin, so that the normal specific gravity, 1059, corresponds to the normal amount of hemoglobin, 100 per cent With this as a working basis, number of tables have been f [illegible] hich [illegible] f [illegible] any work on the [illegible] hemoglobin and the corresponding specific gravity The most suitable of these tables is that of Schmaltz, in which a specific gravity of 1030 represents 20 per cent of hemoglobin and a specific gravity of 1045 5, 50 per cent, from which figures alone the ratio can be arrived at approximately The only contra-indication to the efficacy of this test is a pathologic condition which will increase individual corpuscular weight without increasing the amount of hemoglobin This occurs in dropsies of all kinds and from whatever cause, and in this class of diseases reliance must be placed on the hemometer Any of the simple anemias, and the causes producing them are legion, may be readily studied by the above method, and the value of the treatment demonstrated, so that often a favorable prognosis can be given, where without this aid the attendant must be in grave doubt One other caution must be observed In syphilis there is always, in the active stage of the disease, more or less anemia If, to a syphilitic who has not been treated with inunctions or injections, such treatment is instituted, a rapid fall in the percentage of hemoglobin usually takes place often as high as 10 to 20 per cent Under active treatment, if not pushed to a great degree, the hemoglobin will return to its original percentage, and under a careful administration of mercurials even increase, so that by estimating the hemoglobin at frequent intervals, and changing the dose to suit the condition of the hemoglobin, we may soon be able to so regulate our dosage as to bring about continuous improvement in our patient It may be well to add that this peculiar behavior of the hemoglobin to mercurials does not occur except in syphilis, and in such a case is a valuable diagnostic as well as prognostic point

THE HISTOLOGIC CHANGES PRODUCED BY THE VENOM OF POISONOUS SNAKES AND LIZARDS

There is quite a remarkable resemblance, in many respects, between the toxic substances produced by microbes, by certain plants, as well as by certain animals It has been well established that animals can be made immune, not only against microbic toxins, but also against venoms of different origin Thus, Ehrlich has immunized animals against ricin and abrin, and Calmette against the poison of venomous snakes

There are also certain chemic resemblances between the toxins of various origin, especially in their feeble resistance to heat There has also been found a certain similarity between the lesions produced in the animals killed by these various poisons The changes produced in the tissues by the poisons of serpents and lizards have, however, not received very much attention, if any Nowak's[1] recent experimental study of the histologic alterations produced by snake venom and by the poison of lizards is therefore especially interesting

The effect of these poisons upon the body depends not only only upon the toxicity and quantity of the venom, but also upon the manner in which they are introduced The subcutaneous inoculation does not produce rapid death On the contrary, if the most minute quantity of the venom of the cobra is inserted into the marginal vein of the rabbit's ear, instantaneous death follows In this respect the toxic substances from snakes and lizards differ very much from the microbic and certain vegetable toxins It is well known that the toxins of tetanus and diphtheria require a certain length of time after the introduction before the first symptoms of poisoning leading to death develop If the poisons of snakes and lizards are injected subcutaneously, the dose may be so arranged that some of the animals die very soon after the injection, others after a few hours up to several days

Nowak experimented with guinea-pigs, mice, rabbits and dogs Macroscopically it was especially noticeable that after death caused by snake or lizard poison, the parenchyma of the liver was friable, yellowish and congested Similar changes were also present in the kidneys The microscopic changes were more striking Their principal seat was the liver, kidneys, and the lungs

In the liver the change consisted in a typic fatty degeneration of the liver cells, which in some cases resulted in total disintegration of the cell When the deaths followed very soon after the injection, the protoplasm of the cells was swollen and granular After a few hours vacuoles and other changes of a degenerative character occurred in the interior of the cells The quantity of chromatic substance diminished, and the nuclei would lose their affinity for stains These degenerative changes often lead to total disintegration of the structure of the liver (necrobiosis)

In the kidney there occurred a fatty degeneration of the epithelium, but not to such a degree as in the liver It was generally confined to the convoluted tubules Occasionally some fatty changes occurred in the endothelial cells of the glomeruli Swelling and granular disintegration of the epithelium also took place

In the lungs, areas of congestion developed, together with desquamation of the epithelial cells of the alveoli and migration of blood corpuscles At times the number of white corpuscles would be so great that the pneumonia presented a purulent character The inflammatory changes in the lungs were most marked in the animals that lived for some hours after the injection

Nowak calls attention to the similarity of some of these changes to those produced in yellow fever This fact has already been emphasized by Sanarelli in his work on this disease Nowak failed, however, to find any lesions in the digestive tract as characteristic as those which occur in yellow fever The inflammatory changes in the lungs are also less marked in yellow fever

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[1] Annales de l Institute Pasteur Juin 1898

The results of the study of the effects of the poisons upon the nervous system are to be published later

IMMIGRATION AND INSANITY

It is now many years since Dr FOSTER PRATT in a notable study of the United States census statistics showed that the foreign born furnished an altogether undue proportion of the insane and criminals in this country and drew the inference from this fact that, to some extent at least, we were being burdened with more than our reasonable share of European defectives by immigration Notwithstanding the lapse of time since his publication, something of the same state of affairs still exists, and the opinion has become widespread that it is due, at least in part, to a deliberate unloading of foreign insane and criminals upon our shores It is well known that this has been done to a certain extent, but whether this goes far to account for the excessive proportion of foreign born in our asylums and prisons is another question In New York City, the great gateway of immigration, the admissions to the Manhattan State Hospital, which comprises all the public institutions for the insane in that vicinity, the foreign born admissions for the past ten years are nearly twice as many as those of the native born This may perhaps be credited to the assumption that, as New York is the chief port of immigration, the defectives have a tendency to be sifted out on the spot, only the more vigorous mentally and physically passing on to the interior or Western States Allowing this to be partially true, we have, however, still another fact to explain, that is that in the interior or Western States where there is a large proportion of immigrant foreigners in the population they furnish more than half the admissions to the asylums This is still true in Minnesota and California, and probably also in Wisconsin, and was until quite recent years also the case in large sections of other States such as Illinois The proportion of immigration to population has decreased, but the disproportion of foreign-born asylum inmates still exists

When we consider the numbers of these foreign-born insane, and especially when we observe them as they are found in our public institutions, it is impossible to assume that any very large number of these were deliberately unloaded upon us as defectives A few have certainly been assisted emigrants, but the great mass are unquestionably from the average of their countrymen and not originally more defective than them, so far as any apparent probability and available evidence can show It would appear therefore that immigration has directly promoted and increased insanity.

Mr F B SANBORN, the Massachusetts philanthropist, discusses this subject at some length in a paper read before the Conference of Charities at its last meeting While he admits that many facts seem to indicate that immigration has furnished us with a class of persons more liable to insanity than are the native born, he calls attention to another fact that, at first sight might seem somewhat contradictory to such a view, namely, the increase of insanity whence the immigrants come In Ireland, for example, while the population has steadily decreased since 1851 to the amount of nearly 30 per cent, the number of insane has nearly trebled To come down to more recent times, the same steady decrease of population has continued, the population, which in 1880 was 5,202,648, was in 1896 only 4,560,378 But the total number of insane, which in 1880 was 12,982, had risen in 1896 to 18,966, an increase of nearly 50 per cent At the same time the Irish immigrants to this country were furnishing an altogether undue proportion of the insane in our hospitals, thus producing the apparent paradox of a country getting rid of its insane by emigration and at the same time and *pari passu* with its decrease of population increasing its home contingent of insanity

Mr SANBORN's method of accounting for these facts is not altogether a satisfactory one He assumes that the emigration, while it carried off the most vigorous and younger class, also included the majority of those at the ages in which mental disease is most likely to occur, while it left in the home country the aged and infirm, those who actually furnish the greater number of mental breakdowns This last fact would be undoubtedly a valid cause for a proportional increase of insanity in Ireland, for example, but it gives no good excuse for this actual excessive increase with a decreased population And while we may admit that most cases of insanity occur among the young or middle-aged, it is so because they furnish the bulk of the population, and it does not by any means account for any existing excess of Irish insane in Massachusetts asylums as Mr SANBORN seems to think It is a common saying "that it is a poor rule that won't work both ways," but his application of it here appears to have its defects

Mr SANBORN's observations would seem to have been more restricted than one would suppose when he says that the Germans and Scandinavians in this country appear to be less liable to insanity than the native born If he would consult the statistics of the asylums in the States where these nationalities abound and compare them with those of the general population of the United States census he would see the fallacy of such a generalization It certainly is hardly correct to say that "the German and Scandinavian settlers in the rural States of the northwest seem to show fewer cases of insanity than the native born," the fact that over 50 per cent of the insane in a State like Minnesota are of foreign birth and largely of these races, is sufficient evidence to the contrary

One cause adduced is possibly effective to a certain extent, but will hardly suffice to account for the whole of the excess of foreign-born insane in this country The personal habits as to intemperance are unquestionably not so good amongst the foreigners as amongst the native stock, but the difference is more comparative than absolute

We are forced to fall back on one great general cause for the increase of insanity here and elsewhere, viz, the stress of modern civilization, the greater demands of modern life upon the brain and nervous system In Europe with its more crystalized social systems, so to speak, large sections of the population, the lower classes especially, have been living under conditions in which the rapid progress of the century has had little effect upon them, and these have furnished a large proportion of the immigrants to this country Transplanted here and placed on the very advance crest of the nineteenth century, as regards practical life, it is little wonder that many more of them break down, especially when we consider the hardships, disappointments and other trials that many of them must undergo If this is not alone sufficient to account for the excess of foreign born in our asylums, something may be attributed to the effects of climate as bearing upon habits of drinking, etc, and there are doubtless still other causes efficiently acting of which we may as yet know little or nothing

The increase of insanity in this country is only an incident to its increase throughout the civilized world Civilization has altered and redirected the ordinary processes of social evolution and we are here even more than elsewhere in transition, and immigration is one of the active elements in the process

Mr SANBORN's conclusion that immigration of itself is not one of the factors in the increase of insanity in the United States is not supported by the facts

AN ARRAIGNMENT OF THE ARMY MEDICAL DEPARTMENT

Since all the particulars of the battles near Santiago, Cuba, and the conditions prevailing among the sick and wounded at Siboney and on homeward bound transports have become known to the country, the daily press has been urging the necessity of an investigation to fix the responsibility for these distressing conditions Editorials have appeared charging the Major-General commanding the expedition with reckless neglect of the welfare of those disabled by the exposures and exhausting labors of the campaign Other writers have imputed the status to incompetency on the part of the Quartermaster's Department, but by most the Surgeon-General's Office at Washington and the Medical Department at the front have been arraigned as responsible for needless suffering by their inability to realize and meet the necessities of the occasion It is claimed, 1, that the expedition sailed from Tampa, Florida, to Santiago, unprovided with the field supplies which would manifestly be required in the event of a battle, 2, that owing to the inefficiency of the medical officers accompanying the expedition even those supplies which had been shipped from Tampa were not available when required, 3, that notwithstanding these deficiencies army medical officers declined the proffered assistance of the American National Red Cross to help remedy them, and lastly, that the shipment of soldiers, wounded and prostrated with fever, on transports which, from their construction and grossly insanitary condition, were unfit for hospital purposes, showed a culpable carelessness on the part of the Medical Department which was aggravated many fold by a failure to provide medical attendance and suitable medical and subsistence supplies for use while en route

As to the first charge, we learn from medical officers that SHAFTER's army, while at Tampa, was provided with everything necessary for efficient medical and surgical service in the field, and that medicines, dressings, instruments, hospital tents and supplies, were loaded on the transports in quantities more than sufficient to meet the needs of the Santiago campaign The bulk of the supplies were shipped in connection with the field division hospitals, but accompanying each regiment were regimental supplies largely in excess of the regimental needs, as these supplies were intended, in case of necessity, to supplement the division hospital equipment

To appreciate the groundlessness of the second charge we must understand some of the conditions pertaining to the disembarkation in Cuba The troops were immediately marched in the direction of Santiago, and the medical officers serving with regiments, having no means of transporting their medical supplies, had to leave these behind on the transports, and were bereft of all resources except such as were to be found in the orderly and hospital corps pouches of their attendants and in the first-aid packets carried by the soldiers The partially unloaded transports were ordered to lie-to ten or fifteen miles off the landing to be out of the way of the unloading of other transports Those carrying the equipment of the First Division Hospital and of the Reserve Hospital of the Army joined the naval blockading squadron off Morro Castle, and were not permitted to return to land their supplies until five or six days later, the fight at Guasima having taken place meanwhile The difficulties and delays experienced by medical officers in getting supplies to the front were very great, in view of the fact that no wagon transportation up to this time had been landed Hospital tents were much needed, but there was no possibility of getting them from the transports Even much later, when the Hospital Ship *Relief* arrived, it was found impossible for several days to land her supplies on account of the heavy surf and the want of proper facilities At the landing-place there was but one lighter, which was constantly in use by the Subsistence Department in getting rations ashore By the energy and untiring efforts of the officers of the Medical Department their supplies were ultimately landed, although such work is no more their special duty than is the building of an ambulance wagon or the manufacture of a hospital tent

As to the third charge, the proffer of Red Cross supplies was of no value unless associated with the means of landing and transporting them to the front What was lacking to the Medical Department at the time was not supplies—for there were supplies on every transport in sight as well as on the *State of Texas*—but the means of getting these supplies to the points where they were required

In considering the reported condition of the *Concho* and other transports used in bringing home sick and wounded soldiers it is to be remembered that the Medical Department can do no more than recommend Its officers may inspect and suggest needful alterations to fit the vessel for its proposed voyage, but commanding officers can overrule their suggestions Were the outfitting of extemporized hospital transports in the hands of the Medical Department we may be sure that they would be as excellent in their way as the Hospital Ship *Relief*, which was fitted out under medical officers concerned in the despatch of the sick and wounded, but we feel confident that when the facts are learned it will be found that what was considered to be an imperative military necessity occasioned the use of unfit and unprovided vessels, just as it occasioned the landing of the troops and their advance to an engagement with the enemy without any consideration save that of the military purpose in view Opinions may differ as to whether the accomplishment of the purpose justified the method of its accomplishment

NOSTRUM MANUFACTURERS AS FRENCH "STATESMEN"

The decadence of the French Republic under the sway of speculative commercialism is most ominously evident in the fact that an opulent nostrum vendor now occupies the position in the recently appointed BRISSON Ministry which was refused a decade and a half ago by the distinguished physiologist, PAUL BERT Dr BERT (like Dr OLIVER WOLLCOTT, one of the medical signers of the Declaration of Independence, who long remained an authority on finance) was a man of admitted skill in political economy The recently accepted French minister of finance (M PEYTRAL) owes his reputation chiefly to his success as a manufacturer and promoter of patent medicines

M PEYTRAL, after attempting to form a ministry his own, lately accepted at the hands of BRISSON portfolio of finance He is the first patent medicine "fakir" who has ever held a cabinet position in France His fortune was made in the manufacture and sale of quack nostrums and the promotion of quack nostrum companies He pretends to be a representative "business" man of the radical stripe which panders to the bourgeois ideals of supposed thrift (or rather parsimony) of the speculative commercial classes Until he secured his election as senator, he distinguished himself by puerile poses of the following type On one occasion, on the eve of a general election, when stumping Marseilles he blatantly pointed out that his rival had come from Paris in a sleeper, whereas he, like a true democratic bourgeois, had traveled in a third-class carriage The fact, however, was that he also had journeyed in the sleeper and had only quitted this for the third-class car at the last station before Marseilles

Nostrum-vending is in France even more disreputable than in the English-speaking countries The *Code Républicaine* nominally prohibits the traffic, and only by evasions of the law, such as FLAUBERT pointed out in "Madame Bovary," can it be carried on The patent medicine vendor is in France, for this reason, a species of confidence operator in a traffic without the pale of the law The fact that such an individual should be allowed to juggle with French finance is most significant evidence that the "business" quacks (who caused the downfall of France at Sedan) are again in the saddle Furthermore, it demonstrates that the welfare of the country is again being sacrificed to "business" interests as represented by avaricious contractors Meanwhile the question naturally arises, what has become of that sturdy element of the French medical profession which so often exercised such a potent influence for good during all three of the French republics, and especially during the first decade of the present one? Great Britain has significantly elevated the deservedly criticised social status of her medical profession by creating LISTER a Peer for services to medical science France, once foremost in her reverence for science, has of late fallen so far behind in this particular, that the downfall of even the present pretense of republican forms seems foreshadowed by this triumph of a most degrading form of illegal charlatanism over the once politically potent French medical profession

CORRESPONDENCE

WAR CORRESPONDENCE

THE MEDICAL DEPARTMENT OF THE ARMY IN THE CUBAN CAMPAIGN

BY LIEUT COL. NICHOLAS SENN, U S VOLS ,

CHIEF OF THE OPERATING STAFF WITH THE ARMY IN THE FIELD

NEW YORK, Aug 1, 1898.

DEAR DR HAMILTON—

a [illegible] l of [illegible] Dr Shrady [illegible]

[illegible] he G

graphed me to reply to it I have done so, and send you original copy, for which I ask a very early publication in your journal in justice to the General and his Department.

I leave for Porto Rico tomorrow on the steamer *Relief* On the way down I shall have something to say on the reorganization of the Army I will send you paper from Ponce Hoping that you are well, I am, with kindest regards,

Yours sincerely, N Senn

On Board the Hospital Ship "Relief," July 31, 1898

In an editorial of the *Medical Record* of July 30, suspicions are thrown out reflecting on the efficiency, foresight and proper management of the Medical Department of the Army during the Cuban Campaign The remarks made by the editor are based, as he himself asserts, almost exclusively on a correspondence which appeared in a recent issue of the *Sun* In commenting on this article the editorial states "If the report is true, and there seems to be no good reason for doubting it, the Army Medical Department appears in a very unenviable light It is said that there was a total lack of everything necessary for the proper care of the stricken soldiers Why this was so it is hard to explain especially in view of the fact that the war department has constantly declared, in declining voluntary assistance from charitable organizations, that it was abundantly able to cope with any possible emergency in the field, and yet this is the result" The correspondent of the *Sun* made bold in saying "It was evident that the Medical Department of the Army had failed absolutely to send hospital supplies, or by this time they would have been landed On the one hand it was pitiful On the other, it was negligence that could have been the result only of incompetence" I am sure if the editor of the *Medical Record* had been better informed he would not have been so willing to lend his ear to a newspaper correspondent whose success nowadays consists largely in tinging facts with more or less imagination and sensationalism The medical men inside and outside the army have little, if any, influence over the lay press, but the editor of a medical journal of such high standing with the medical profession throughout the entire country as has been willingly accorded the *Medical Record*, should take the necessary pains to investigate more thoroughly the circumstances which dictated the editorial before casting any reflections whatsoever on the chief of the medical department Dr George M Sternberg is no stranger to the medical profession and the American people He occupies the exalted position of Surgeon General of the United States Army, not by political preferment or gradual ascent by promotion, but by merit President Cleveland made a wise selection when he made the appointment It was a selection that met with the heartiest approval on all sides General Sternberg knows from long and actual experience what it is to be a soldier in the field He has been there He served with distinction during the War of the Rebellion He has followed the unruly and wily Indians over plains and mountains during many a campaign He has investigated yellow fever at home and abroad, regardless of his own health and life Since he has been placed in charge of the Medical Department of the Army he has been tireless in making many much needed improvements

The Army Medical School is one of the many fruits of his labors He has taken special interest and pride in promoting the intellectual and professional advancement of his young army surgeons, assigning them for temporary duty in large cities, where they could enjoy clinical instruction and laboratory work He has taken a deep and active interest in the organization and usefulness of the Association of Military Surgeons of the United States, and served most acceptably as president Last year he was honored by the profession by election to the Presidency of the American Medical Association The earnest devotion to his duties made it impossible for him, to his great regret, to attend the Denver meeting The name of General Sternberg is often seen on the programs of scientific societies from the Atlantic to the Pacific and from Labrador to the Gulf He crossed the Atlantic, last summer, to represent his Government at the International Congress, held in Moscow, Russia, and his work there added much to the luster of American medicine The Surgeon General, now so unjustly accused of incompetency, not only is accorded a well deserved place in the front rank of the profession, but his administration shows executive talents which have served him well during the present campaign He has shown good judgment in the selection of his advisers Colonels Alden, Greenleaf and Smart, are all men of large experience and admirable executive abilities, as all can testify who have been brought in contact with them The charge of incompetence and ignorance certainly lacks foundation in the case of General Sternberg and his administration Now, as to facts The correspondent of the *Sun* who furnished all the material for the editorial referred to goes on to say "The wounded were carried back from the fighting line on stretchers, and laid on the ground to wait until the surgeons could reach them Many were soon beyond the need of surgical treatment. There were four divisions of the army, and each division was supposed to have its hospital, but as a matter of fact there was but one, the division hospital of the Fifth Army Corps, under Major Wood There were five surgeons, a hospital steward, and twenty assistants, to care for the wounded—several hundred They had a number of operating tables, a small supply of medicines, but few bandages and no food for sick or wounded men It was comparatively easy to get supplies from the *State of Texas* ashore to the hospital here (Siboney), but there was no transportation to the front" In the opinion of the editor of the *Medical Record* and the correspondent of the *Sun* the Red Cross Association's work was the only redeeming feature of the whole campaign, to judge from the language of the latter 'God knows what we should have done here without the help of the Red Cross—your ship, your surgeons, and your nurses' and there is no other help for us at the front. Our wounded up there must have food, bandages, anything you can let us have in the line of hospital supplies" The editorial in the *Medical Record* brings matters to a focus in the closing extract 'It is right and proper that the Surgeon General should resent any interference with his prerogatives, but he should not directly invite it by making possible such

Brigadier-General George M Sternberg, Surgeon General of the Army a condition of affairs as here described" This inference is entirely unwarranted by facts as they existed during and after the battle of Santiago

The correspondent and editorial do not even mention the steamer *Olivette* we found July 7 anchored close to the shore before Siboney This steamer, in command of Major Appel, U S A, was used as a hospital ship This ship was in place and ready to receive the wounded during the battle The steamer, at the time mentioned, had on board 300 wounded, who received the best surgical attention and nursing The next day the steamer left for the United States, the medical staff being reinforced by the addition of Acting Assistant Surgeon Brown of Chicago from the *Relief* General Sternberg at an early date recognized the importance of hospital ships during this war The *Olivette* was chartered for this special purpose, was well equipped and reached the seat of war in time The hospital ship *Relief*, formerly the *John Englis*, under the supervision of its commander, Major Torrey, was transformed into an ideal floating hospital in less than six weeks and reached Siboney July 7, a day before the *Olivette* left for its home port. Do these things show either negligence or ignorance? Do they not rather demonstrate foresight and an earnest endeavor to better care for the sick and wounded in a way creditable to our country and the chief of the Medical Department? This question can safely be left for the wounded to answer The Surgeon General accepted the legitimate services of the Red Cross Association and had reason to expect aid from this source, should pressing emergencies present themselves The medical officers, the wounded and the sick have every reason to be grateful to Miss Clara Barton, for what she did in furnishing ice, delicacies and medical supplies. The *State of Texas* did excellent work in aiding the Medical Department, but that is no reason why those connected with the Red Cross Association should claim all the credit and undertake to criticise a department of the government which has done all it possibly could in anticipating the requirements of a sudden emergency It is a source of great regret that there should be any friction whatever between the Medical Department and the friends and supporters of the Red Cross Association. It must be clear to every unprejudiced mind that the treatment of the sick and wounded must remain under the direct care, control and management of the Medical Department, and that the function of Red Cross is rather auxiliary to it than as an independent organization if the greatest amount of good is to be realized from it. The hospital ship *Relief* brought an immense amount of medical supplies, delicacies, cots, pillows and blankets When we arrived at Siboney we knew our presence was much needed, and looked in vain for some one to inform us where and how to land. The precipitous and rocky nature of the shore and the great depth of the ocean made it unfavorable to secure anchorage for several days. A single lighter attended to the demands of numerous transport ships I am sure no one could blame the Medical Department for the unavoidable delay in unloading the supplies. The little steam launches did what could be done in bringing to the shore what was most needed. Major Torrey worked night and day in supplying the requisitions made by the surgeons in the field and hospitals. There was no red tape here, all they had to do was to inform him what was wanted and it was delivered as soon as it could be brought to the shore. The lack of proper transportation facilities from the landing to the front can not be charged to the Medical Department. It took more than a week of the hardest kind of work to land all of the supplies and, considering the limited facilities available it is and always must be regarded as a source of satisfaction that it was made possible at all. The *Relief* brought 1000 cots and an ample supply of blankets, which reached the hospitals with as little delay as possible Lieut Crabbs of the 8th Cavalry, showed a creditable degree of ingenuity, energy and often of courage in landing the supplies The complaint that the sick and wounded lacked medicines and dressing materials is true only to a certain extent, Some of the medicines were exhausted, owing to the unexpected enormous demand, but they were supplied as quickly as could be done under the existing circumstances The writer had the privilege to operate in all of the hospitals and was always able to find the essential antiseptics and dressing materials required in military practice, and this was at a time when the supplies were at the lowest There was no lack at any time of stimulants and anesthetics There is no use in denying the fact that immediately after the battle the tentage and blanket supply were inadequate, but these defects were corrected promptly War always has had its hardships and discomforts; it can not be prosecuted in parlor cars and clubhouses Or soldiers expected deprivations and unavoidable discomforts, but on the whole they were subjected to less actual suffering than they had reason to look for To the credit of the medical officers it must be said they shared the inevitable hardships with the soldiers They lived on the same food, drank the same water and made the moist ground their beds The writer will always cherish the memory of the hardships incident to a campaign in a foreign country, a tropical climate and among a strange people The Cuban campaign was planned and executed so quickly that some omissions and defects had to be expected, It is a source of gratification to know that the complaints made against the medical department have come from newspaper correspondents and camp followers more than from the soldiers themselves Among the thousands of sick and wounded with whom I have been brought in contact during the Cuban campaign I have seldom heard a complaint, on the contrary, I have heard nothing but words of praise for the hard working, self sacrificing medical officers and the department they represent in the field

Ice-Water Enteroclysis in Typhoid Fever,

Toledo, Ohio, Aug 1, 1898,

To the Editor —After having had favorable results with ice water flushings of the bowels in the lowering of high temperatures in typhoid fever, I have wondered that greater stress is not laid upon the use of this measure by those who write upon the treatment of that disease

The cases are few in number in which I have had the opportunity to test the practice, and it may be that these few cases were such as would have done well under the Brand method, the wet pack, or any other plan of refrigeration, indeed, such is doubtless true

For several reasons though, my practice, limited as it is, leads me to look upon ice water enteroclysis as superior to any other method of lowering the temperature which I have seen used

In the first place, fever patients need much more water than they in their semiconscious condition are likely to ask for or than they will drink when it is offered them, and it is also a fact that there is less water passed into the body [illegible] than was forced into the bowel

I place this reason first because I believe it is important that these patients take into the system more water than they are accustomed to drink even in health and sterilized water to which has been added common salt [illegible] is a rational way of meeting a vital requirement

I do not [illegible] now urge the water absorb[illegible] in the [illegible] but that it does has on the reduc[illegible] [illegible] the [illegible] there was a good [illegible] y [illegible] absorbed a [illegible] accumulation of gas, thereby relieving a troublesome tympanitis as well

Patients are not frightened or fatigued by the operation, but, on the contrary, so far as can be told by the expression of countenance, and by their general condition, are made more comfortable by it

When the temperature is low, nervous manifestations are usually quiet, but whether this quiet is caused by a direct influence upon the nervous system or whether the nervousness is secondary to high temperature is a matter for individual speculation, but I believe that the heat centers are quite as apt to be influenced for good by the abstraction of heat from the interior of the abdominal cavity as they are by radiation from the surface of the body

Enteroclysis is much easier to administer than is any kind of bath, and hence is much surer of being properly attended to The technic is simple

A long, soft, rubber catheter is slipped upon the ordinary hard tip, a napkin is tightly wound around the tip until a hard ball is formed which is to be pressed against the anus to prevent the ejection of the enema The catheter is oiled with petrolatum and as soon as the tip has entered the anus the water is permitted to flow and, by rotating the catheter to and fro with the fingers, it floats upward as the water expands the intestine, and used in this way it does not double upon itself, or cause rectal irritation The instrument is retained in the bowel for twenty minutes, the nurse maintaining pressure upon the anus during the time, and when the water is allowed to come away it is found to have the temperature of the bowel The fountain should not be higher than a foot above the patient's body

The patient weighs 150 pounds and his temperature is 105 degrees, 150×105=15,750 Water, four pounds, at 32 degrees, is introduced The heat which this abstracts from the body is the difference between 32 degrees and 105 degrees × 4=292 The original heat units, 15,750—292=15,458, 15,458—150=103, and it has been my experience that the axillary temperature a half hour after the enema could be predicted with almost the above mathematic exactness J S Tracy, M D

306 W Woodruff Ave

Flannel Underclothing for Soldiers

Clinton, Ill., Aug 6, 1898

To the Editor —There has been a good deal said of late about our soldiers in Cuba wearing abdominal bandages, "cholera pads" to protect them from diseases of hot climates I do not think much of the pad I think it would be better protection and more sensible to furnish each man with two pairs of flannel drawers, which would protect the soldier's legs as well as his abdomen The extra pair could be kept dry and clean ready for a change and would make but little additional weight or bulk to carry

I agree with Surgeon General Sternberg that the field is no place for female nurses They are all right in the local hospitals, but the battle field and on the march is not their place It was so during the Civil War and it can not be otherwise in the war with Spain John Wright, M D

Proposed New Designation

San Diego, Cal, Aug 3, 1898

To the Editor,—With the advent of a new century the time is propitious for dropping such meaningless appellations as "Old School," "Regular," "Allopath," etc Why not, henceforth adopt the eminently distinctive and appropriate title, "New School of Scientific Medicine," suggested by Surgeon General Sternberg in his recent address at Denver?

Faithfully yours, C M Fenn, M D

ASSOCIATION NEWS

Comment on Association Proceedings—In connection with the proceedings of the Association of American Medical Colleges published in this number, it is well to note a resolution adopted by the American Medical Association, which is far reaching in its effects The resolution was introduced by Dr Dudley S Reynolds of Louisville, the president of the Judicial Council of the College Association, it was referred to the business committee, approved by it, and adopted with no opposition (For resolution *vide* Journal, July 9, p 83) This resolution practically makes a new qualification for membership for every County society in affiliation with the American Medical Association, since one cannot enjoy the full privileges of membership unless he is eligible to serving his society *as a delegate to the* American Medical Association, and it is a question whether the Association was competent to adopt it in this form, for it is, in effect, an amendment to the constitution *It is not to call attention to this structural weakness* but rather to its dynamics That a resolution of this character could be presented to two successive general sessions of the American Medical Association and not be adversely discussed, even by the benevolent advocate of the poor young man who must struggle to enter the profession at all, and therefore should receive a training making many of his class monuments of ignorance and incompetency, seems almost too wonderful to be true Whatever may have been the private opinion of many who kept silent, public sentiment is in favor of a fitting educational period for the intending physician We congratulate the College Association on their having the stamp of approval set upon their own standard, and, which is a source of greater gratulation, the decision of condemnation upon any course less thorough than their own —*Bulletin Am Acad Med*, August, 1898

Politics in the American Medical Association—If one may judge by the tone of a recent editorial in the *Ohio Medical Journal*, in spite of the fact that Columbus is the meeting place of the American Medical Association for next year, there is not an abiding peace in the minds of the profession of that State There is a good deal of truth in the statement of the *Ohio Medical Journal* that "the political part of the convention continues to be managed by medical politicians, these gentlemen constitute a sect apart, come chiefly from St Louis and Louisville, and come with everything cut and dried," but granting it, there are many who will not give the matter the prominence which it evidently receives at the hands of our contemporary Most of the members attend the sessions of the American Medical Association for other reasons and with other purposes than to engage in political bickerings, and are only too glad that there are some who are willing to do this work for them If they think they are running the show, let them think so as long as the performance continues, they get but an empty honor, forgotten before the next session, and have a great deal of labor for their pains While they are doing this work the rest of us can meet and chat with friends, attend Sections, visit places of interest and enjoy ourselves The men who are so unfortunate as to be elected to office will earn all they get from the honor, scores of times over, before next June —*Atlantic Med Weekly*, August 6

Resolutions Submitted to the American Medical Association at the Denver Meeting, June 8, 1898, by W H Sanders, M D, Health Officer of Alabama (*Vide* Journal, No 2, Vol xxxi, pp 85 and 95, July 19, 1898) Finally referred to the Business Committee

Whereas, The protection of the public health is one of the duties and functions of all well organized and progressive governments, therefore, be it

Resolved, 1 That it is the sense of this body that a public health system correct in principle, complete in detail and appli cable alike to every part of the country, should at the earliest time possible be created and put into vigorous operation

2 That in order for such a system to be constitutional, coherent and permanent, it should logically conform to the genius and plan of our concentric systems of government, that is to say, its roots should be deeply planted among the people, the recognized source of governmental power under our constitution, and its branches should reach up through, and be sustained by, every political division of our State governments to one central and resourceful power, the Nation

3 That to lay the foundations for such a system the States should formulate their policies of public health with sufficient uniformity as to render them susceptible of being united into one symmetric and harmonious whole, and to lead up to, and terminate in, one central and co operative head, viz , the general government acting through a bureau of public health

4 That while the officials for actively conducting a public health system should be of local origin and authority, and therefore directly and proximately responsible to the people, the States and the Nation should co operate with the local authorities in furnishing the expert skill and financial aid necessary for suppressing dangerous contagious and epidemic diseases when they appear in any given locality, and for preventing their spread from one part of a State to another part of the same State, or from one State to another State

5 That the principles herein announced should apply to the theory and practice of quarantine, which, although an important part and function of a public health system, is not the only one of its numerous and beneficent powers To divorce the exercise of quarantine power from a public health system, and to confer it upon a separate organization which derives its existence and vitality from the general government, and not from the people of the States, would be to emasculate and ultimately to destroy said system, as well as to overthrow one of the most sacred and valued principles upon which our government is founded

6 That an earnest appeal is hereby made to the Congress of the United States to recognize the principles herein proclaimed as constitutional and unassailable, and as in thorough accord with the generic truths out of which our political fabric has been evolved

SOCIETY NEWS

American Public Health Association —The Twenty sixth Annual Meeting of this Association will be held at Ottawa, Ontario, Sept 27–30, 1898 The executive committee has selected the following topics for consideration

"The Pollution of Water Supplies"
"The Disposal of Garbage and Refuge"
"Animal Diseases and Animal Food"
"Car Sanitation"
"Steamship and Steamboat Sanitation"
"The Etiology of Yellow Fever"
"The Relation of Forestry to Public Health"
"Demography and Statistics in their Sanitary Relations"
"The Cause and Prevention of Infectious Diseases"
"Public Health Legislation"
"The Cause and Prevention of Infant Mortality"
"Transportation of Diseased Tissues by Mail"
"The Period During which each Contagious Disease is Transmissible and the Length of Time for which each Patient is Dangerous to the Community"
"Sanitation, with Special Reference to Drainage, Plumbing and Ventilation of Public and Private Buildings"
"Report upon some Method of International Arrangement for Protection Against the Transmission of Infectious Diseases"
"Disinfectants"
"To Examine into the Existing Sanitary Municipal Organizations of the Countries Belonging to the Association, with a View to Report upon those most Successful in Practical Results"
"The Duties and Responsibilities of the Healthy Man for his own and others' Health"

Upon all the above subjects special committees have been appointed Papers will be received upon other sanitary and hygienic subjects

Southern Indiana Medical Society —The Annual Meeting will be held at Indian Springs, Ind , Aug 11 and 12, 1898 George Knapp, M.D , President, Vincennes, Ind , T A Hays, M.D , Secretary, Burns City, Ind

PUBLIC HEALTH

The Sale and Importation of Saccharin and other similar sweetening substances, dulcin, crystallin, etc , have been forbidden in Austria to all but druggists

"To see Oursels as Ithers see us" has been recently applied in the campaign against alcoholism in Germany Drunken men are followed home from the saloon and photographs taken of their most disgusting and humiliating poses The photographs are then presented to the subject when sober, with a warning circular

Health in Michigan —The report of the State Board of Health for July cites rheumatism, diarrhea, neuralgia, bronchitis and tonsillitis as the five most prevalent diseases of the month Compared with the preceding month, dysentery, cholera infantum, cholera morbus, diarrhea, inflammation of the bowels and intermittent fever increased, while influenza, pleuritis and measles decreased in area of prevalence The Board celebrated its quarter centenary August 9, 10 and 11

Health in Indiana —The diseases most prevalent throughout the State for July were typhoid fever, diarrhea, intermittent fever, dysentery and cholera morbus As compared with June, the diseases which increased in prevalence were mostly water borne diseases, as typhoid, dysentery, cholera infantum, inflammation of the bowels, diarrhea, intermittent fever and puerperal fever, those showing decrease were "house diseases," *i e* , such as are due to bad ventilation, *e g* , rheumatism, tonsillitis, bronchitis, whooping cough, etc

Bubonic Plague on the Island of Formosa —The Japanese physicians have been making a careful study of the small epidemic of fifty cases which is summarized in the *Arch Klin de Bordeaux* for June There were 22 deaths 4 natives, 4 Japanese soldiers and 42 laborers Constipation was the rule in three-fourths of the cases, the rest had a yellow diarrhea, but there was no albuminuria nor pneumonic expectoration The blood contained, besides the bacilli, an exaggerated number of white corpuscles The prognosis depended upon the condition of the heart, which grew weaker and weaker until final collapse about the fourth day Camphor and quinin proved absolutely ineffectual An abrasion of the skin was only discovered in six cases The liver was hypertrophied in six, and the spleen in nearly every case, but these conditions were ascribed to preceding malaria or beriberi If the patient survived five days recovery was probable

Prophylaxis of Gonorrhea —The recent German Dermatologic Congress concluded its long discussion of gonorrhea with the recommendation that in view of the present unsatisfactory results of treatment it is important to educate the public, especially young men, to realize the dangers and far reaching results of gonorrheal infection As prophylactic measures, instillations of silver nitrate or of 20 per cent solution of protargol and glycerin immediately after coitus were advised, and especially the use of a condom Neisser and others confirmed their previous endorsement of protargol as the most effective and least irritating of the silver salts, but for chronic cases the stronger argentamin is desirable For women Neisser prefers ichthyol and urethral pencils The importance of commencing treatment as soon as possible after infection was strongly urged Neisser and others consider matrimony allowable when repeated examination fails to show any gonococci, but a few take the ground that marriage is impossible as long as any urethritis persists

Osteopathy in Indiana —An interesting contest between the Indiana State Board of Health and the osteopathic school of physicians has just come to a close in Lafayette (July 30) Some weeks ago Dr Gott of Crawfordsville, a member of the Board, called the Board's attention to the fact that the osteopaths practicing in the State had not taken out either State or county license, as required by the new State medical law The osteopaths stated that they were not engaged in the practice of medicine and were not required, therefore, to take out license They furthermore urged that even should they apply for license the State Board would refuse it. The State Board is made up of representatives of the allopathic, homeopathic and eclectic schools, and it has been its policy to refuse the application of all who are not regular graduates of one of the three schools When the osteopaths defied the Board, it was decided to make a test case, so Dr Woodruff, who had recently come from the Institute of Osteopathy at Kirksville, Mo , and located at Lafayette, was arrested for not taking out a license before engaging in the practice of medicine The trial of the case was bitterly contested, both sides being represented by the best counsel in the State The court found Dr Woodruff guilty as charged, and fined him $40 Woodruff has taken an appeal to the supreme court, and will endeavor to have the law declared unconstitutional The State Board will cause the arrest of all other osteopaths practicing in Indiana —*Globe Democrat*, St. Louis

The New York Quarantine Station has imposed upon it a stupendous task, which it barely meets, owing to the arrival of the various army hospital vessels from southern latitudes where yellow fever is a constant menace The *N Y Tribune* gives a cut of the disinfecting boat, the *James W Wadsworth*, on duty alongside a newly arrived steamer Dr Alvah H Doty, the health officer of the port, has long since discarded alleged disinfections by sulphur and substituted steam in lieu thereof, a method first suggested by Dr Edward R Squibb of Brooklyn, N Y At first there were many obstacles to be overcome, but finally the present apparatus, in use for two years, fulfilled all expectations The *Harvard*, the largest vessel disinfected, underwent the process in two days' time, and thus saved to the Government hundreds of dollars a day in the speedy release to her duties Under the old process two or perhaps three weeks would have been consumed The vessel in question, it must be remembered, according to Dr Doty's account, had about 500 men aboard, every one of whom had clothing and bundles by no means above suspicion The steam used had a temperature of 230 degrees F or over, but formaldehyde gas is also resorted to in instances where injury by steam to fabrics, such as silk, laces, leather goods, etc , would result Other devices for the prevention of communication by the development of incubative cases are used

NECROLOGY

CHARLES S WARD, M D , Yale, 1863, formerly of New York City, died July 31, aged 55 years He was a member of many associations, among which were the University Club the St Nicholas Society and the Society of Colonial Wars Having retired from a very active practice several years ago, he took up his residence in Bridgeport, Conn , where he died He was noted for his quiet charities and benefactions

CHARLES MORRIS FISCHER, M D , Oakland, Cal , professor of histology of Cooper Medical College, San Francisco, Cal , died July 29 Dr Fisher was taken sick about five weeks ago and his illness rapidly developed into typhoid fever He was a native of Pennsylvania, 32 years of age, went to the Coast several years ago and soon after his arrival was made assistant city superintendent of schools During his college days he became deeply interested in the study of histology and about four years ago, when the chair of assistant professor of histology became vacant, was chosen to fill the vacancy Later, he was made professor, with the retirement of the former incumbent of the chair

EDWARD LEWIS STURTEVANT, M D , Harvard, 1866, died at his home in Framingham, Mass, July 30 He was born in Boston, Mass , Jan 23, 1842, was graduated from Bowdoin College in 1863, served as a captain in the Twenty fourth Maine Volunteers during the latter year, but left the army for a medical career As an expert in scientific agriculture he was connected with the United States government for many years and in 1881 took charge of the New York State Experimental Station at Geneva, where he remained for six years Besides his many contributions to agricultural papers he edited *The Scientific Farmer*, 1876-79 *The North American Ayrshire Register*, and, with Joseph N Sturtevant, published "The Dairy Cow," a monograph on the Ayrshire breed of cattle

GEORGE C HUBBARD, M D , New York University Medical College, 1857, died August 3, at his home in Tottenville, Staten Island, N Y , of which town he had been a resident for forty years On January 1 he was appointed assistant sanitary superintendent of the health board, which placed him in charge of the Staten Island branch After serving in the Civil War as assistant surgeon and subsequently as surgeon of the One Hundred and Sixty fifth Volunteer Infantry, he returned to Tottenville and resumed practice, succeeding his father He was for many years physician at the Mount Loretto Mission of the Immaculate Virgin, where there are from 800 to 1000 boys In 1890 he was appointed a member of the Richmond County Police Board and continued in that place until 1896 From 1893 until 1895 he was president of the County Board of Excise He also served as health officer of the town of Westfield and of Tottenville during its village history

JOSEPH M COCKRILL, M D , Baltimore, Md , July 23, aged 50 years ——Joseph B F Fuller, M D , Norwich, Conn , July 31, aged 87 years ——Theodore H E Gruel, M.D , Philadelphia, July 31, aged 52 years ——Joseph M Klecfus, M D , Detroit, Mich , July 30, aged 40 years ——E T Long, M D , Bethlehem, Ky , July 21, aged 78 years ——Henry Mullen, M D , Philadelphia, July 31, aged 64 years ——Thomas Murray, M D , Beaver, Pa , July 31, aged 89 years ——Ed B Oatman, M D , O'Fallon, Ill , July 30, aged 51 years ——Jacob S Shimer, M.D , Philadelphia, July 27, aged 62 years ——T R. Odell, M D , Spokane, Wash , July 1, aged 82 years ——W D Boker, M D , Astoria, Ore , July 1, aged 53 years

DEATHS ABROAD —Dr Carlo Giacomini, professor of anatomy in the University of Turin, aged 57 years ——Dr Victor Michaux, surgeon to the Civil Hospitals of Metz, aged 70 years ——Dr C Dufay, formerly senator for the Loir et Cher, president of the Medical Association of that Department.——Dr Ernest Cadèze, medical superintendent of the Lunatic Asylum of Liége and a very distinguished entomologist, aged 71 years

BOOK NOTICES

Exiled for Lese Majestie By J T WHITAKER, M D Cloth Cincinnati Curts & Jennings, 1898

A little love story endeavors to hide the true purpose—a series of remarks on literature, art, medicine, astronomy and kindred topics, chiefly in the form of conversation between the three leading characters Their talks and readings are blended with apt quotations, in the handling of which the distinguished author is an acknowledged master In his remarks on medicine he has woven many neat sentences that will soon be "familiar quotations" "Medicine must be a fascinating study" "The science of it is Practice is very different." Again "The redeeming element in practice is the diagnosis, that is the knowledge of the nature of disease" "I should think it would be the cure" "The people judge a physician by the results of his treatment, but physicians judge each other by the correctness of the diagnosis" "What is the objection to the practice of medicine? It must be one of the highest of arts" "So it is, but as an art it is subject to debasement, and still more so as a trade The charlatan is of all creatures the vilest He is the vampire who sucks the blood of the sick, but the people at large do not know it, and they rarely draw the lines Regular, irregular or defective, they are all doctors " A physician when pressed for a more favorable prognosis is made to say "Only the charlatan is always certain " Again "The physician does not pretend to still the storm, he is simply a pilot, who is satisfied to steer the ship through " "But the pilot sinks with his ship," said the librarian "The physician's reputation goes down, too," replied the doctor, "and often under the decrees of Heaven, over which he has no control " In speaking of the death of a famous emperor, "He had the fatal consultation of the whole faculty " "If there was as much difference of opinion among medical men with regard to the treatment of disease as among bankers concerning the remedy for financial distress, or among scholars as to the interpretation of a difficult passage, the human race would long since have become extinct. But it is good to know that the medical men have their day, if it is only the last day " "But why don't you teach your patients?" "They want to be cured only, they don't want to be taught " "There is more in the blood than we have dreamed of in our therapy "

Atlas of Syphilis and Venereal Diseases, including a Brief Treatise on the Pathology and Treatment By Prof Dr Franz Mracek of Vienna Authorized translation from the German Edited by L Bolton Bangs, M D Pp 122 Philadelphia W B Sanders 1898 (From W T Keener, Chicago Agent) Price $3 50 net

The clinical material figured in this book is drawn from the service of Dr Mracek in the Rudolfo Hospital in Vienna, this will be recalled as the hospital made famous by the lamented Billroth The plates are lifelike and the material comprising the clinical cases quoted is such as to be very instructive The careful study of the clinical statements and the examination of the plates will amply repay students and practitioners The glance through the book is almost like actual attendance upon a famous clinic

Handbook of Materia Medica for Trained Nurses, including the sections on Therapeutics and Toxicology and a Glossary of terms with dose and use of each drug By John E Groff, Ph G Pp 235 Philadelphia P Blakiston's Son & Company, 1898 Price $1 25 net

The text of this book presents an abridgment of the subject of materia medica and there are questions appended to each chapter There is an extensive glossary at the end The work is intended primarily for students and trained nurses, but any medical man can read it with advantage

Lectures on Tumors By John B Hamilton, M D , LL D , etc Third Edition 21 Illustrations Pp 143 Philadelphia P Blakiston's Son & Company 1898 Price $1 25 net

The last edition of this book was published in 1892, and many changes have taken place in the pathology of tumors, which have been mentioned in this volume, not included in its predecessors The work has been greatly enlarged, almost rewritten

The illustrations are mostly original, and the classification followed by the author is the last revision of the nomenclature of the Royal College of Physicians Of considerable interest is the latest theory of the origin of the dermoid cyst by parthenogenesis, and Ruffer's description of his microbe of carcinoma

The publisher has apparently spared no pains to secure the typographic excellence of the volume

The Retrospect of Medicine Edited by Jas Braithwaite, M D , London Assisted by E F Trevelyan, M D , B Sc , M R C P Cloth Pp 436 Vol 117, January–June, 1898 London Simpkin Marshall, Hamilton, Kent & Co , Ltd

This half yearly volume contains the usual retrospective view of discoveries and improvements in the medical sciences during the period covered The abstracts from articles appearing in medical journals during the half year are arranged under the heads of "General Medicine and Therapeutics," "Diseases of the Nervous System," "Diseases of the Organs of Circulation," "Diseases of the Organs of Respiration," "Diseases of the Organs of Digestion," "Diseases of the Urinary Organs," "General Surgery and Therapeutics," "Nervous System," "Alimentary Canal," "Affections of the Eye and Ear," "Affections of the Skin," and "Obstetrics and Gynecology " The volume is up to its usual standard of excellence

The Mental Affections of Children, Idiocy, Imbecility and Insanity By William W Ireland, M D Pp 442 London J & A Churchill Edinburg Jas Thin, 1898 Price, $4 00, net

Those who read the author's former book on idiocy and imbecility will recognize a great deal that was in that work, but the present work is more elaborate and treats more exhaustively of the condition

The pages on the development of the brain in childhood, the pathology of genetous and paralytic idiocy, sclerotic and syphilitic idiocy and that on insanity of children are new and not contained in the former

This work deals with statistic causes of idiocy, and takes up at length the question of hereditary and, indeed, idiocy in all the phases

The author strenuously objects, as do most philanthropists of the present day, to the practice of placing idiots in wards with the insane, and takes up the question of their careful treatment and final restoration to the body politic The neglect of the States and failure to provide sufficient accommodations for this unfortunate class, is as a rule, owing to the absence of accurate knowledge as the exact amount of benefit that can be secured for them Such books as this have therefore an important mission in popular education

A Manual of Bacteriology, Clinical and Applied, with an appendix on bacterial remedies, etc By Richard T Hewlett, D D , M R C P , D P H Pp 439 Philadelphia P Blakiston's Son & Company, 1898

In this manual the author has endeavored to give some account of those portions of bacteriology which are of special interest in clinical medicine and hygiene The preparation of tissue, methods of culture, description of pathogenic organisms and their detection, the examination of water, etc , have therefore been given at some length The direction for staining and preparation of cultures, in the examination of air, water, blood, etc , are fully discussed

This book will be very useful for those whose laboratory facilities are limited

Thirty Seventh Annual Report of the Cincinnati Hospital Paper Pp 178 Illustrated Cincinnati Commercial Gazette, 1898

This report covers the year ending Dec 31, 1897, contains a description of the Cincinnati Hospital, reports of the various officials and the branch hospital with detailed tabulations concerning various cases of typhoid fever, acute rheumatism, pneumonia, hernia, etc., occurring in the hospital

Twelfth Annual Report of the State Board of Health of Ohio Cloth Pp 508 Illustrated Norwalk, Ohio Laning Printing Co , 1898

Besides the usual matter pertaining to sanitary questions, this report contains a number of papers of interest Among others we note "A Report on the Treatment of Diphtheria with Antitoxin," "What Can be Done for the Prevention of Consumption," "Evil Results of Present Educational Methods," "Present Position of Formaldehyde as a Disinfectant," and "Tuberculin Test for Tuberculosis in Milch Cows "

Handbook for the Hospital Corps of the U S Army and State Military Forces By Charles Smart, Deputy Surgeon General U S A Approved by the Surgeon General of the Army Second Revised Edition 12mo pp 358 illustrated, blue muslin, $2.25 net New York William Wood and Company

This is the third revision of the well known handbook of

Colonel Smart and deserves a place in the library of every military surgeon As its author is an accomplished chemist, it is natural to expect that the chapters on sanitary care of camp, etc , would be of the highest order

The appearance of the book is timely and it will be found of great use to the medical corps in the field

A Compend of Diseases of the Skin By J F Schamberg, M D Pp 137 Philadelphia P Blakiston's Son & Company 1898

There are ninety nine illustrations in this volume The illustrations are excellent and the text up to date The student will find this as useful as any of its much derided but nevertheless very necessary class

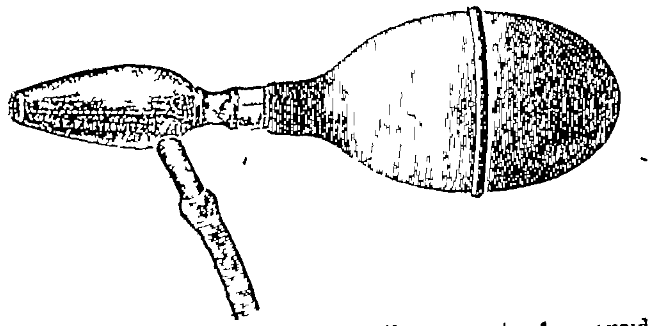
NEW INSTRUMENTS

A COMBINED EUSTACHIAN INFLATOR AND EAR AND NOSE DOUCHE

By WILL WALTER, M D

CHICAGO, ILL

The use of the Politzer air bag in Eustachian inflation is decidedly clumsy and not entirely satisfactory for several reasons It is necessary to hold the nasal tip in one nostril and to exclude the other with one hand, that the other may be free from pressure upon the air containing bag, while, too, the shape of the bag is awkward and the whole instrument unduly large and hence difficult to carry when emergency requires In addition there is great variability in the volume and force of the air through difficulties of compression and through the kinking, softening or hardening of the rubber tubing These apparent defects led me to try a small bulb with a nasal tip directly attached for this purpose Subsequently, in view of the usual demands for intranasal and postnasal treatment in connection with inflation, and frequently with this douching of the external auditory meatus, I thought to substitute for the simple nasal tip a reflex tip of special shape, hoping thus to meet all the demands in one instrument



The instrument shown in the cut thus consists of an ovoid rubber bulb, specially shaped and sized to be easily compressed by the hand, attached to a hard rubber reflex tip, to the return flow portion of which is applied a piece of small tubing The latter may be in length according to the desire of the patient The tip is adapted as well as possible to meet the needs of both nose and ear, fitting the average external orifices as well as may be done by one instrument. The instrument should prove of value for Eustachian inflation, as it may easily be held to the nostril and compressed by one hand, while the other hand holds the opposite nostril, the exit tube being closed

As an ear douche, its simplicity, convenience and cleanliness of application would commend it for hot douching of the external meatus

As a nasal douche it may be used for douching the nares in cases where there is pathologic or post-operative occlusion and it is desired to cleanse the parts, and this it will do much more readily than the spray By entirely compressing the exit tube a nasal douche, easily regulated in force and area of application by variation in pressure, may be attained Few physicians do not, at times, need to restore the normal pressure to the middle ear, and this is most advantageous when early employed The compactness of this instrument, together with its varied uses, would seem to commend it for routine use in practice

103 State Street

MISCELLANY

Globulicidal Properties of the Tapeworm—Schnauman and Tallqvist report that the bothriocephalus latus, whether derived from an anemic or non anemic person, contains a true blood toxin —*Deutsche Med Woch* , May 19

The Fifth International Congress for the Study of Potable and Mineral Waters, Climatology and Geology, will be held at Liège, Belgium, from September 25 to October 3 Secretary, Dr Jorissenne, Boulevard de la Sauvenière, 130, Liège

Prof William H Welch has resigned as dean of the Johns Hopkins Medical School Dr Welch does not sever his connection with that institution, for he will retain his position as professor of pathology

Consolidation of Colleges—The consolidation of the Atlanta Medical College and the Southern Medical College under the name of the Atlanta College of Physicians and Surgeons, is announced This will be the only regular medical college in Atlanta

From a Study of the Agglutinating Power of Cholera Vibrios, Ransom and Kitashima have demonstrated that the agglutinating power of a cholera culture can be modified at will without appreciably affecting its virulence or other characteristics, by varying the specific cholera serum —*Deutsche Med Woch* , May 12.

Inflammable Stomach Gases—Dr Drouet relates that he was recently examining the throat of his three year old child with a tongue depressor, by the light of a candle, when the gases rising from the stomach caught fire and burned for a moment with a bluish flame, slightly singeing the doctor's mustache and the child's lips —*Jour de Méd de Paris*, July 3.

Pus in the Pelvis—Johnson (*Am Jour of Obstet* , July) believes that the majority of bad pelvic pus cases, etc , could be more quickly evacuated through the vagina than through the abdomen, and at the same time done more easily, completely and safely He reports twelve cases tending to emphasize this conviction

Bile Not Secreted by the Liver.—Barbera concludes from numerous tests on dogs with biliary fistulas that the bile is not a secretion of the liver, the functions of the liver do not include the secretion of bile, which is merely an excretion of the liver cells, its production depending upon the work of the cells —*Munch Med Woch* , May 24.

In 104 Total Extirpations of the Uterus for carcinoma at the Landau Clinic, 27 per cent have shown no signs of recurrence during the five years since, 32 per cent have relapsed Neither youth nor extreme age seems to be absolute counter indications for an operation He has had three fistulas persist He recommends completing the operation at one sitting and removing both ovaries every time —*Munch Med Woch* , May 17

Congenital Pelvic Kidney—Cragin (*Am Jour of Obstet* , July) reviews the literature on this subject and and adds one case to the few already reported, obstruction of the parturient canal resulting His conclusions are Pelvic kidneys may cause dystocia, induction of premature labor is indicated as a rule, in rare cases, where the pelvic kidney is in a condition of hydronephrosis, vaginal nephrectomy may be advisable In the writer's case vaginal nephrectomy was performed

Official Privileges Extended to Women Physicians.—A recent decree places women occupying official medical positions in Russia on the same footing as men, with the exception of promotions, wearing uniforms and decorations. They do not lose their right to a pension if they marry, and their orphan children inherit it. The decree only refers to a limited number who completed their medical course under certain circumstances. Woman has long been legally on an equality with man in Russia.

Pride Before a Fall.—Pedagogic father is trying to show off his supposed precocious boy before company.—"My son, who would you rather be, Shakespeare or Dewey?" Little son meditates awhile and says, "I'd rather be Dewey." "What, my son, and why?" "'Cause he ain't dead."—*New York Weekly.*

The Importance of the Role of the Phagocytes is much enhanced by the new discoveries in regard to their action in tetanus intoxication. They not only destroy the bacteria, but owing to their property of absorbing all the solid particles they encounter, they absorb and render harmless the tetanus toxin if it is combined with a solid substance, such as brain matter. These facts show that the leucocyte is capable of destroying a microbe even when it is secreting a virulent toxin.

The Absorption of Calomel by Leucocytes after injections into the tissues proceeds very rapidly where the circulating current is rapid and where they reach it before its transformation into mercuric chlorid. In the subcutaneous and muscular tissue the leucocytes merely surround the calomel without absorbing it or carrying it away. The transformation, therefore, only occurs at the point injected, and is promoted by the fluids of the organism. Vaselin holds the calomel in suspension longest and is absorbed by the subcutaneous connective tissue in one minute.—G. Piccardi, *Derm. Cbl.*, April.

Stricture of Small Intestine.—In the *Phila. Med. Jour.* of July 9, Matas presents an illustrative case of multiple stricture of probable tubercular origin, within thirteen inches of the jejunum. He performed enterectomy by Maunsell's method, not applicable in all cases, *e. g.*, contraindicated in case of very thick or inflamed mesentery, where he considers Czerny-Lembert or other simple suture methods preferable. The case is of interest from the almost insurmountable difficulties of diagnosis before operation, the high position of the lesions, the period of evolution of the stenotic process, twenty years, and the apparent cure.

Porro Operation vs. Total Hysterectomy.—Boldt writes on this subject in the *American Journal of Obstetrics* for July. He believes total hysterectomy should be performed in preference to supravaginal hysterectomy with extraperitoneal treatment of the pedicle, never be performed unless absolute indications are present, and the child being dead *in utero*, the uterus should be removed *in toto* unopened. He considers the advantages of total hysterectomy over the Porro operation as less danger of infection, no danger from secondary hemorrhage, less danger from intestinal obstruction, shorter convalescence and less danger of ventral hernia.

Sharp Practice.—Lady V. (At office of fashionable Harley Street consultant.) "I have called, Doctor, to ask if there is any cure for sleep walking of several years standing. Lately it has become worse."

Dr. Hy. Pryce. "It can be cured, madam. Take this prescription and have it filled at Cold, Steele & Co's."

Lady V.—"Cold Steele & Co.?, why, that is not a drug store, it is a hardware firm."

Dr. Hy. Pryce.—"Yes, madam. The prescription calls for a paper of tacks. Dose, 2 tablespoonfuls scattered about the floor before retiring."—*Vanity Fair.*

This was for the purpose of puncturing her *tire*.

The Central Nervous System in Acute Anemia shows the effect of the intoxication from an insufficient supply of oxygen, as the red corpuscles decrease in number. In a case Scagliosi has recently studied, uterine hemorrhages persisting thirty-four days in an otherwise healthy woman in the eighth month of pregnancy, the evidences of the lack of nutrition were very pronounced. In the brain cells the Nissl cell corpuscles had crumbled into fine granules, and the accessory nucleus had a hole in or near the center, close to the wall. The atrophy and chromatolysis of the ganglia cells of the spinal cord were accompanied by diminished staining power on the part of the crumbled Nissl corpuscles. He adds that it would be impossible for cells thus degenerated to take up the oxygen, even if it could then be supplied them.—*Deutsche Med. Woch.*, May 19.

La Societe d'Autopsie is an offshoot of the Paris School and Laboratory of Anthropology and it is difficult to overestimate the importance of its work in the study of the organs of men who were prominent and widely known in science, art, literature, politics, etc. Gambetta is the subject of the latest report issued by the society. It contains his "psychologic biography, the brain and the function, with the authentic history of his disease and death," and throws a remarkable light on the organic substratum of Gambetta's superiority as an orator and extemporaneous speaker, as it shows that the foot or "cape" of the third left frontal convolution, the verbal motor par excellence, was double in him.—*Bull. de l'Acad. de Méd.* June 21.

Unorganized Charity.—The medical profession is about the only calling in life that is not, or need not be, dependent upon organization to enable it to give safely, wisely and quickly. The needy are always with us, and all that is needed is a plenty of this world's goods and a kindly temperament, for, as the poet says:

So many gods, so many creeds,
So many paths that twist and wind,
While just the art of being kind
Leaves all the other arts behind.

Orthoform in the Organism.—It has been demonstrated in Leyden's clinic that besides its local anesthetic effect, orthoform is absorbed in the stomach and eliminated (not pure) through the kidneys, relieving pain in the urinary passages in acute gonorrhea and cystitis; dose 1 to 1.5 grams a day, preferably in a solution. In the urine it responds to the same tests as the amido phenol group, most marked with chromic acid, and also produces the ring characteristic of pyramidon. The amido phenol leaves the organism paired with sulphuric acid, shown by the much increased amount of "ether sulphates." Orthoform also has the property of preventing the putrefaction of albumin. After the ingestion of orthoform the urine can stand for days without ammoniac putrefaction.—*Deutsche Med. Woch.*, June 30.

A Waiver of Privilege.—The first appellate division of the supreme court of New York holds, in the personal injury case of Rauh vs. The Deutscher Verein, that the plaintiff, having submitted evidence, whether it be the testimony of the plaintiff herself or of another witness present, of the transaction between the patient and physician, waived the privilege of excluding the physician's testimony, and the truth of what happened, and what was ascertained by the physician in his examination and the treatment of the patient, can be testified to by the physician. A different rule, it thinks, would work the greatest injustice, and would expose the defendant to danger on account of the fact that the rule would prevent him from examining into the truth of the plaintiff's statements.

A Colossal Roentgen Plant.—Professor Trowbridge of Harvard University has completed a vastly powerful apparatus for experiments in electric force, his principal object being to test further the penetrating power of the X ray. The apparatus consists of a series of 120 Franklin plates, or leyden jars, supplied with power by a storage ba containing 10,000 plant cells The voltage necessary for experiments is 2,500,000 It is reported that he has already made experiments which prove that with an apparatus as powerful as this the X rays can be made to penetrate not only human flesh but bones and tendons, thus probably making possible still more remarkable attainments in surgery by their aid

Enforced Higher Education —The Association of American Medical Colleges, which is an organization first brought into actual existence by Dr Eugene F Cordell of Baltimore, has done a noble work in raising the standard of medical education in the United States, and in gaining for our country the respect and admiration of foreign medical schools and physicians There are some schools in this country, however, which did not join this association, and which still "cut rates," so to speak, and by shortened courses and various tricks carefully omitted from mention in the annual catalogues and announcements, help to lower the standard of medical education in this country In order to force these schools into the association and make them the equals of all the good schools, the AMERICAN MEDICAL ASSOCIATION has passed very practical resolutions declining to register as delegate or permanent member any physician who shall hold the position of teacher or professor in these low grade schools, or who shall be a graduate of such schools. If the AMERICAN MEDICAL ASSOCIATION has the grit to stick to this resolution, and will not be overpowered by the political members of the association, the effects of this rule will have a very salutary effect on the poorer schools —*Maryland Med Jour*, July 23

Removal of Health Officers at Pleasure —Physicians appointed as health officers for cities, towns and counties "may be removed at any time by the local boards appointing them," under section 2060 of the Kentucky Statutes This, the court of appeals of that State construes, in Riffe vs Finsby, to be equivalent to power of removal at pleasure or discretion, though the general rule is that a person appointed or elected to an office, the term of which is prescribed, cannot be removed therefrom, by even the appointing power, except upon trial of charges preferred, and of which he has notice Nor does it consider that the case is altered by a city ordinance fixing the term of office of the health officer, whether valid or not, though it is suggested the ordinance would be beyond the power of the city to pass, the State statute not fixing any term of the office in question, and it being plainly the policy of the legislature that there should be no term of such office, and the incumbent should be, for manifest reasons, removed at the pleasure of the board of health.

Fibroma of the Nasopharynx —Woodson (*Laryngoscope* for August) believes that few if any, cases of nasopharyngeal fibromata occur which cannot be successfully extirpated or destroyed without endangering the patient's life He says "The mode of operation has little or no influence in preventing symptoms, because the tendency to recurrence is marked during the period of active development, the arrest of development follows adolescence, but absorption frequently takes place, when total extirpation of the growth is rarely followed by recurrence" He considers hemorrhage a great danger in operating, and that the galvanocautery loop, while exceedingly rapid, fails to absolutely prevent serious hemorrhage On the other hand, the cold wire *écraseur* is bloodless, painless and easily manipulated, and the instrument *par excellence* He does not advise the injection of escharotics, on account of the density of the growth requiring considerable time for the separation of the slough and also causing offensive odor

The Sequel of a Druggist's Revenge —The London *Lancet* cites a case before a provincial police court, in which a small boy who had been swinging on the supports to the blinds of a druggist's shop, after capture had been liberally dosed with an infusion of quassia The druggist was fined properly, says the *Lancet*, on the following grounds the next mode of punishment might not be so harmless as quassia and the executioner might be less instructed in therapeutics Again, an element in this way might be imported into the punishment of children which should never be tolerated, towit, the element of nervous terror "We know and the druggist knows," says our contemporary, "that the solution of quassia was as harmless as, say, many sorts of table beer, but the boy did not know it He might easily believe that his disagreeable sensations were the prelude to impending death from poisoning, and a fond mother might possibly support the view, with the result that much more pain, and of a different sort, would be caused than was intended" Although there is a dash of casuistry mingled with the heavy humor of the bar we hope that the controversy is now at an end, especially since the deterrent factors of stronger blinds or increasing weight of years may be the safeguards

Hemorrhagic Internal Pachymeningitis —In the *American Journal of Medical Sciences* for August, Herter writes on this affection as it occurs in children, believing that the lesion is sufficiently frequent to deserve more attention than it has hitherto received From his own observations he says "I do not feel certain that there is any symptom or combination of symptoms which we meet in hemorrhagic internal pachymeningitis which we may not occasionally encounter in the course of a severe acute infection without the presence of any cerebral lesion whatever At the same time hemorrhagic pachymeningitis is a lesion which we should think of as a possibility whenever we meet with unilateral rigidity and convulsions, with deepening stupor, in a cachectic or rachitic child under one year of age In the absence of the signs of pneumonia and tuberculosis, I think this diagnosis gains distinctly in probability" Another aspect to which he calls attention is the probability of slight traumatisms to the head, causing rupture of vessels in a highly vascular membrane, giving these cases thus a medicolegal importance

Puerperal Sepsis —Mundé, in his presidential address recently delivered before the Am Gyn Society (*Am Jour of Obstet*, July), said ' Unquestionably in the large majority of cases of puerperal sepsis in private practice the infection comes from the fingers or instruments of the physician or the nurse, and this statement applies not only to the poorer classes, but to a certain extent to those in better circumstances It has been frequently stated that the women in well conducted lying in asylums are far safer from puerperal infection than those who are attended in their own houses, even though they be brown stone fronts This is not as it should be It is not only the hands and instruments which may introduce infection, but also the clothing of the attendants, which may have been in contact with some infectious case and which have not been thoroughly cleansed and disinfected Naturally the denuded endometrium, the more or less bruised and lacerated cervix, vagina and perineum are by far more susceptible to the entrance of septic germs than the more or less intact sexual organs during pregnancy Retention of portions or clots or membranes does not necessarily mean their decomposition and a septic infection In some cases he believes the septic germs, "wherever they came from and however they got there, were sucked into the gaping vagina during change of position of the patient, say from the back to the side, or *vice versa*, or after a fecal evacuation, when the relations between the pelvic viscera and intra abdominal pressure changed so that the gaping vulva was placed in a favorable condition for the entrance of air by suction "

Value of Gratuitous Medical Treatment can not be Recovered.—That he had been put to great expense for medicines and doctor's bills, was averred by the plaintiff in a personal injury case as one of the elements of damage which he had sustained for which he should be allowed to recover compensation But the evidence was that he had been taken to a hospital and treated there, without incurring any liability for the medicine and medical attendance Could the value of such medical treatment, what would have been charged for it, if charged for, be made the foundation of such a claim as that stated? The supreme court of Missouri holds, in the recent case of Morris vs the Grand Avenue Railway Company, that it could not The proof of the value of the gratuity exerted in one's behalf in relief of an injury inflicted, it maintains, is in no sense the proof of the expense to which one had been put, or the liability incurred, in the relief from that injury, and that there is no warrant in law or logic for holding to the view that the proof of the one state of facts justifies the finding of the existence of the other, or that proof of one raises the presumption of the existence of the other To authorize a recovery on part of the injured plaintiff, there must have been an actual loss to him, or a liability that same may or will occur, and when loss has not or can not occur, by reason of the action of others, gratuitously exercised in behalf of the party injured, or when no legal liability has arisen, by reason of restrictions of law against the intervening third party performing the needful services, it quotes cases to show, no action can be maintained Nor does it consider that it is any answer to the denial of the defendant that the plaintiff has been put to expense for medical treatment to say that "the defendant in an action for personal injuries caused by his or its negligence ought not to profit by the generosity, charity, or indulgence extended to plaintiff by a third party "

Pregnancy Following Ventrofixation —A Lapthorn Smith of Montreal (*Am Jour of Obstet* , July) reports that in his 111 cases pregnancy has taken place in six, one or both ovaries and tubes having been left in four and both ovaries and tubes in the other two He cites replies to 100 inquiries addressed in May, 1898, to the leading physicians in America as to whether they knew of any cases of pregnancy following ventrofixation Of seventy three replies received, thirty two knew of no such cases, and the experience of forty one aggregated 148 cases From the evidence he concludes 1 That as far as curing retrodisplacement, either retroflexion or retroversion or anteflexion with retroversion is concerned, ventrofixation with two buried silk stitches through the peritoneum and fascia gives the most reliable results Failures are unknown when the operation is performed in this way 2 Ventrofixation should be reserved for cases in which abdominal section is necessary for other reasons When it is expected that pregnancy may follow some other operation should be chosen , because, 3, when the uterus is firmly attached to the abdominal wall and pregnancy follows, trouble of some kind, either pain, miscarriage, or difficult labor requiring obstetric operations, takes place in about 30 per cent. of the cases. 4 When *suspensio uteri* was performed, that is, the uterus attached to the peritoneum of the abdominal wall, a few relapses occurred 5 A third method, it is claimed by some, namely, the intra abdominal shortening of the round ligaments, is preferable to either fixation, ventrofixation or *suspensio uteri* After the menopause, it may be added, none of the objections urged are tenable

Cholelithiasis of Typhoidal Causation (*vide* JOURNAL, June 11, p 1415) —The London *Lancet*, July 9, refers to the work done by Dr H W Cushing, at the Johns Hopkins Hospital, in elucidating the intercurrence of gall bladder trouble with the presence of the bacillus of typhoid fever in the human economy Dr Cushing, *in primis*, has confirmed the view that the gall-bladder, like Peyer's patches, is a site of election for the typhoid bacilli In 1891 Blachstein noticed their constant occurrence in the gall bladder of rabbits after experimental inoculation Later, Professor Welch discovered that they persisted in this situation , in one animal they were found 128 days after inoculation, when they had disappeared from every other organ Acute cholecystitis may appear in the late stage of typhoid fever, but there is a group of cases in which it appears some months after the attack and always in association with cholelithiasis The connection between typhoid fever and cholelithiasis was first pointed out in 1889 by Bernheim and has been confirmed by several writers In professor Halsted's clinique in Johns Hopkins Hospital, ten out of thirty one cases of cholecystitis with cholelithiasis, which were operated on, gave a history of typhoid fever the interval varying from a few months to twenty years Such a long interval by no means negatives the connection, for the bacillus has been found in a case of cholecystitis as late as fourteen years after an attack of typhoid fever Similarly, abscesses of bone may follow typhoid after long intervals , in a case recorded by Buschke the interval was forty six years and yet the bacillus was cultivated from the pus These cases well illustrate that the germs of disease may remain latent in the body for an indefinite period, a doctrine which is only beginning to be appreciated and which has far reaching possibilities Dr Cushing reports a remarkable case of cholecystitis and cholelithiasis in which chlecystotomy was performed and the typhoid bacillus found in the gall bladder, although there was no history of previous typhoid fever The blood serum gave the typhoid reaction The wide spread recurrence of the typhoid bacillus has only been lately recognized In 1892 Guarnieri first described an infection of the biliary passages, liver and spleen without intestinal lesions

Foreign Bodies in the Ear and Nose —In the *Medical Record* of June 11, Barret urges more careful knowledge on the part of the general practitioner as to the removal of foreign bodies from the ear and nose He advocates the use of as few instruments as possible—a head mirror, one serrated and one rat-toothed forceps, foreign body forceps, a flexible tube, a "nest" each of aural and nasal specula, and a cotton carrier, being the essential instruments In case of the nose he has "the mother or nurse take her seat upon a straight-backed, steady chair, with her back to the table or stand, on which the lamp is placed in such a position that the light shines over her right shoulder Then she should take the child on her lap, clasp its limbs between her knees, and with her right arm thrown across its body secure its arms, while with the left hand on its forehead she holds its head firmly and steadily against her right shoulder The operator then places himself in front of the patient, seating himself upon a straight chair or stool (never use a rocking chair), and with the thumb of the left hand slightly tips up the end of the nose, while the right hand so adjusts the head mirror as to throw a flood of reflected light into the nostrils Having located the foreign body, proceed as quickly as possible to remove it before the child becomes frightened or the nervous strain upon the mother becomes too great No force should be used under any circumstances, lest the delicate parts be seriously injured If possible, grasp the offending body with a pair of forceps, and by gentle traction withdraw it , or very often, as in the case appended, the flexible probe may be bent in the form of a hook of suitable size and slipped past the obstruction, then turned, and the foreign body rolled along the floor of the nasal fossa, until it either drops out or can be grasped by the fingers Sometimes it is necessary to use a nasal speculum and dilate the nares considerably before we can locate a foreign body or effct its removal The procedure is much the same in case of the ears, but usually more difficult and great care must be taken to avoid laceration of the walls of the auditory canal The child's head should be turned so as to bring the affected ear toward the operator, and held as directed above A syringe and warm water may be tried, taking care, however, not to use too much force and thereby rupture the drumhead, and also to dry the ear thoroughly afterward with a little absorbent cotton on a cotton carrier T examining the ear the lobule is grasped between the index middle fingers and gentle traction made upward and back while the thumb and index finger insinuate the speculum into the orifice with a slight rolling motion The speculum most generally used resembles the one for the nose, except it is longer and pointed "

The Mortality of the Medical Profession —The report of Dr Tatham, the medical officer of the local government board, on the mortality of occupations during the three years 1890–92 has recently been issued by the Registrar General as a supplement to the report of the Registrar General for the ten years 1881–90 The report is one which demands careful examination, and we hope to refer to it at greater length on a future occasion We will now only observe that Dr Tatham reports that the number of members of the medical profession recorded in the last census of England and Wales was 18,936, an increase of 25 per cent. as compared with less than 3 per cent., which had been the rate of increase in the previous ten years The comparative mortality figure for medical men is 966, as against 821 for lawyers, 533 for the clergy and 953 for occupied males in the aggregate The mortality among them is higher than that of lawyers at all ages up to the 55th year Dr Tatham, however, has some grains of comfort, for he finds that in the three years with which he deals the diminution in the death rate of ages under 45 noticed by Dr Ogle has continued, while at ages from 45 to 65 there has been a decrease from the high rate of 1880–82, although the mortality still remains somewhat higher than in 1871 At ages above 65 there has been a further increase in the mortality As on the whole the increase has been at ages above 55, Dr Tatham suggests that it may be partly due to the influenza epidemic, which was at its height in 1891, and is known to have been especially fatal to persons beyond the prime of life It is a remarkable fact that the most frequent of all causes of death, not only in the medical but also in the cleric and legal professions, are diseases of the heart Pulmonary tuberculosis and diseases of the respiratory system, which, in most other occupations, stand higher than any others in the scale of mortality, occupy much less important places, the mortality from bronchitis in the medical profession being not more than one-seventh of that to which the general male population is subject The causes of death to which medical men appear to be especially liable are gout, diabetes, urinary disease and suicide It appears, indeed, that the tendency to the commission of suicide has notably increased among medical men The number of deaths attributed to diseases of the liver, of the urinary organs and to alcoholism has decreased On the whole, if we omit the increase in suicide, it would appear that the death rate from causes which may be classed as preventable shows a decided tendency to decline in the medical profession —*British Medical Journal*

The United States Army Field Hospital System —The hospital corps of an army is divided into two detachments, one of them being for service in the field hospitals, the other for manning the litters and ambulances for the removal of the wounded from the field The laying out of the field hospital proceeds on four lines, separated by intervals that must be determined by the nature of the battlefield The first line of hospital service is coincidental with the line of battle, and includes regimental surgeons, orderlies and company bearers On the second line are the first dressing stations, at the nearest point beyond range of the enemy's fire Here ambulance surgeons attend the wounds, and ambulances and litter bearers of the hospital corps convey the wounded to the third line This is called the ambulance station Reception, operating and dressing tents are erected, where the wounded can be attended until they can be removed to the division hospital at the base of supplies None of the hospital corps serves in the line of battle The wounded are conveyed to the first dressing stations by privates from the ranks The army regulations provide that four privates from each company shall be designated as company bearers They are taught how to handle wounded men and in first aid, in addition to their regular duties as armed combatants They fight in the line until their services are required to attend the wounded whom they convey to the first dressing places There the injured are turned over to the hospital corps, and the company bearers return to their places They are under the direction of their own officers and have nothing to do with the dressing of wounds Their only care is to convey the wounded beyond the reach of the enemy's fire At the first dressing stations, where the wounded receive their first attention, aside from such hasty bandaging as the regimental surgeons may be able to provide, there is a completely equipped field hospital in miniature In the United States Army the main medical stores are carried in army wagons, but as these can not keep up with the line of battle, it is proposed that pack mules be employed to carry such supplies to these dressing stations A medical case or pannier, so built as to fit the back of a mule, contains all the materials required, a variety of antiseptics, medicines for the relief of pain, bandages, splints, plasters and operating instruments A cook accompanies each of the divisions, carrying a case of portable cooking utensils As soon as this detachment reaches its station tents are put up, the medical cases are opened and their contents placed in readiness for use an operating table is improvised by placing two of the folding panniers together, so that they will afford a place on which to lay the wounded while the surgeon is working over them, while the cook sets up his tent and makes ready to prepare light nourishment.

Not Liable for Leaving Fragment of Needle in Perineum —A surgeon and physician, who holds himself out as such to the public, and accepts employment as such for pay, does so under obligations which are imposed upon him by law He takes upon himself the obligation when he accepts such employment that he will exercise fair, reasonable and ordinary skill in the conduct and discharge of that employment The highest possible skill is not to be expected of him, but it is expected, and the law demands of a person holding himself out as a professional man, that he shall have such knowledge, such skill, and shall exercise such care as are ordinarily exercised by men in his profession in good standing in the community in which he resides This is the rule which the court of common pleas of Hamilton county, Ohio, took for its guidance, in the case of Eislein against Palmer, where it held, June, 1898, that, according to the evidence offered by both parties, it was manifest that the surgeon sued for malpractice had exercised all reasonable care and skill, and there was no negligence on his part In performing an operation to remove some cicatricial tissue from the perineum, the needle used in passing the suture was broken, and the surgeon could not find the fragment by touch or sight, and speedily closed the operation, on account of the patient having become very weak under the influence of the anesthetic Two days before the date set for the patient to receive final instructions and leave the hospital, the surgeon's horse ran away, throwing him out of his buggy upon his head, so that he was not able for months thereafter, either mentally or physically, to attend to any business Other doctors took the case from that point, and about a year later performed an operation, finding the fragment of needle embedded in cicatricial tissue which had formed all about it, in the perineum, apparently just where it was left when it was orignally broken off Such being the case, the court holds that a verdict in favor of the surgeon was not against the weight of the evidence or the law It also particularly holds that the surgeon was under no obligation to tell his patient or her husband while she was his patient, that a needle had been broken and part left in her body, but that it was his duty to tell her when he should discharge her as his patient from his care as such surgeon or physician, because to tell her would only be to endanger the success of the operation He did not have to anticipate dangerous and unavoidable accidents, continues the court, but he had a right to expect that he would be able to attend his patient until she got well

The Cause of Death From Electric Shocks—In these days in which electricity is coming more and more into everyday use, in which after an accident the first thought is frequently, if not usually, as to who is responsible and from whom may financial compensation be received, and in which the association of electricity and civil suits is of common occurrence, the results of the experiments of Oliver and Bolan, carried on during the past year, and published in the *British Medical Journal* are of considerable interest These experiments have been made with a view of ascertaining the cause of death after electric shocks, and the report includes a large amount of research into the effect upon animals of the alternating current in varying doses The paper is illustrated by a number of records of the blood pressure, pulse and respiration of animals, before, during and after the application of the alternating current of varying voltage They conclude as follows "When an animal is exposed to electric currents of sufficiently high potential, death is, practically speaking, instantaneous The animal is thrown into opisthotonos, during which breathing is suspended and the heart's action momentarily quickened and then arrested, if the current is strong enough it is stopped at once On shutting off the current there occurs a deep inspiration usually followed by an expiratory cry This has often been noted by workmen when one of their number has suffered a serious accident, and by it their attention is called to one who is found dead as the result of electric shock Dogs through which an electric current has been passed, may on breaking the current, not only breathe spontaneously and rhythmically for several seconds, even a minute or two, but bark loudly, and yet all the time the heart has ceased to beat. In a few experiments death has been due to contemporaneous cessation of the action of the heart and lungs Primary cessation of the heart's beat is without doubt the general rule, while under no circumstances have we succeeded in causing primary arrest of respiration followed by a failure of the heart. They also report the testimony of workmen employed in electric generating stations, who say that it is usual for men killed by electric shock to breathe a few times after life is otherwise apparently extinct From the facts within their knowledge they conclude that death in the electric chair must be instantaneous and without pain."

Cincinnati.

Drs La[illegible] and [illegible] have been appointed surgeons [illegible] brigade with the rank of ma[illegible]

The following Cincinnati physicians attended the late meeting of the A[illegible] Medical Association held at Denver: Drs Holmes, E[illegible], Ransohoff, Zinke, Buck, Conner, H. M. Brown, [illegible] French, Oliver, [illegible], Bru[illegible]field, Malsbury

Dr J T Wh[illegible] professor of theory and practice of the Medical College of Ohio, [illegible] a [illegible] subject, entitled [illegible]

Dr H. I. Wo[illegible] has been appointed professor of physiology and histology of the [illegible] Dental College.

San Francisco.

The buildings of the affiliated Colleges of the University of California are about completed and the moving in of the laboratory apparatus is now in progress. The spring term of the Medical Department [illegible] at the old building [illegible] to the new quarters about the first of October. [illegible] case, and that the [illegible] of completing the buildings and furnishing the laboratories [illegible] unnecessarily, is [illegible] to the persistence of Dr. R. Beverly Cole, president of the Medical School and a former president of the American Medical Association. He has devoted almost all his time to the superintendence of the work on these buildings for the past [illegible] years and in addition to this by no means [illegible] physical work has expended a good deal of his own money upon the buildings Dr Cole suffered from an attack of partial hemiplegia, about nine months ago, but as soon as he could be out of the house he was again at the college buildings seeing that the work was pushed rapidly ahead, and that all particulars of the contracts were lived up to, indeed, it is probable that this work has kept him alive for more than a year, for his health has been failing rapidly during the last two or three years It has been the hope of every one of the faculty that Dr Cole might live to see his heart's desire, these magnificent college buildings, finished, and the Medical School installed therein The move to the new quarters will probably have a most beneficial effect upon the college, for it has already shown some promise of this in the added interest in the laboratories and laboratory work. The recently created Electrical Department (established a little over a year ago) will be provided with a laboratory quite unequaled for its apparatus and facilities in this country, and it is anticipated that a very large amount of original research will be done therein One somewhat novel feature will be a course of lectures on the most recent discoveries in the line of animal electricity, which will be delivered to all the classes and will also be attended by a goodly number of physicians as well It is quite probable that the City and County Hospital will be located near the new building of the Medical School, in which event advantages of this department of the State University will be materially enhanced

Philadelphia.

Abuse of Charity in Hospitals.—As in all cities, the abuse of charity in Philadelphia has reached such a stage that the word "flagrant" may be properly applied, but one society after another has devised ways and means for its correction Probably that one which will eventually prove successful is the one recently approved, which provides that persons applying for treatment shall give a statement as to their financial condition, income, etc., and having a statute enacted by the legislature making it a heavy penalty for any one guilty of making false statements At the meeting of the Medico-Legal Society recently held here, and of which Dr Samuel Wolfe is chairman, this subject was discussed at some length, and a plan is being formed by which [illegible] will be raised along these lines in the early fall. It is also hoped to secure the endorsement of the County Medical Society and afterward have the [illegible] of [illegible] the subject properly before [illegible] legislature

[illegible]

according to the father s testimony, became abusive He stated that the object of his visit was to get some one from the hospital to attend his son, as other physicians would not take charge of the case This the resident physician refused to do All of these facts have been elicited before Coroner Ashbridge, and on asking the father, "Why did not the Samaritan Hospital doctors treat the wounded foot?" he was told that he did not know, but was under the impression that medical ethics prevented it being done At the inquest the coroner stated to the jury "that the question to determine was from which wound the lockjaw had developed, but unfortunately, no autopsy could ever reveal that fact While the evidence may point to the wounded foot as the cause, we can not determine that" On account of the connection of the resident physician in the case and of his abusive language toward preachers, the coroner censured him quite severely and thought that the hospital should take some action in the matter The last accounts stated that the resident had resigned

Dr Guiteras Prostrated —It is reported that owing to the excessive labors forced upon him on account of the campaign in Cuba, Dr John Guitéras has been prostrated with fever and overwork He reported 250 cases of yellow fever in the hospital at Siboney on July 16 and up to that time there had only been five deaths from that cause, thus proving the mildness of that disease In the epidemic of yellow fever last year in the South, Dr Guitéras also attributed the low death rate to the fact that, owing to a better understanding of that disease and of its symptoms than was formerly the case, many cases were recognized earlier and consequently received appropriate treatment before alarming complications arose, thus reducing the mortality

Bequest —By the will of Mrs Eliza H Frailey, widow of Commodore Frailey of this city, $17,000 has been left to the Hospital of the Protestant Episcopal Church of Philadelphia

A Case of Suspended Animation at St Mary's Hospital. —On account of the death of his mother, Louis Holyworth, a young man of highly nervous temperament, fell into a state of unconsciousness when he lay in a trance for a period of about forty eight hours

Stamping out Tuberculosis Among Cattle —According to the investigations of Dr Leonard Pearson of Philadelphia, State Veterinarian, tuberculosis in cattle is rapidly disappearing and in many sections of the State the disease is very uncommon It is stated that the older sections of the State suffered most, from the fact that more cattle were affected and, according to the provisions of the law, these had to be destroyed About 30,000 cattle have been tested with tuberculin and in a larger number physical examinations have been made, and of these three thousand have been destroyed, thus getting rid of this many foci of infection

Strange Bequest to the University of Pennsylvania — Edwin P Kelly, an eccentric tailor who recently died in Philadelphia, inserted a clause in his will providing that after death a sufficient sum of money be set aside for converting his body into a mummy for the benefit of science, and that the same be presented to the University Museum Owing, however, to the fact that the University would not receive the bequest, and to the fact that decomposition of the body had begun, this provision of the will can not be carried out

THE PUBLIC SERVICE

Assignments of Army Medical Officers —To the 2d Army Corps General Wm M Graham Camp Alger Va Acting Asst Surgeons Isaac W Brewer from Watkins N Y Frank W Ross from Elmira N Y Joseph E R Ellis and Fred W Palmer from Washington, D C John C Orr from Chambersburg Pa., Chas Y Buttler from Norwich Conn, John T H Slayter from Cambridge, Mass, and Jeremiah F Leahy from Washington, D C To the 3d Army Corps, General James F Wade Chickamauga Park, Ga Major John P Dodge, brigade surgeon, Major D Appel, Surgeon U S A, relieved from the 1st division 7th Corps and the following acting assistant surgeons John J Repetti and Clark I Wertenbaker from Washington, D C Harry E Getler from Littletown Pa John E Bacon from Buffalo N Y John Mason Williams from Louisville Ky, H L Gilchrist from Cleveland, Ohio D R Dewey from North Adams Mass Chas F Craig from Danbury, Conn, Chas E V Kennon from North Easton Mass, and A F Smith from Freeport, Ill To troops at Tampa, Fla Acting Asst Surgeons Urban S Bird and Paul T Dessez from Washington, D C Jos F Chmelicek from New York Geo H Fox from Downington, Pa and Hermann B Gessner from New Orleans, La To the 5th Army Corps at Santiago, Cuba, via New York City Major Lawrence C Carr brigade surgeon, and the following acting assistant surgeons Wm T Hamilton from Ironton Ala, Jas T Persons and H B Mohr from Mobile Ala., J M Newell, Ricardo Gastón, Jos M Pena, Clarence S Perry Wiley L Atkey and E Van Hoód, all from Washington D C, W Edson Apple from Philadelphia, Pa, and John A Lowner from Boston Mass Via Tampa Fla Major Seaton Norman Surgeon 3d Volunteer Infantry Capt R S Woodson, Asst Surgeon U S A and the following acting assistant surgeons J R Shannon from Washington, D C, Randall R Hunter from Fulton, Kan, George H Fonde from Mobile, Ala, Geo E Lawrason from Macon, Ga Frank R Maura from Pensacola, Fla Milton Vaughan from Little Rock, Ark., and C H Tebault, Jr from New Orleans, La To the 7th Army Corps, General Fitzhugh Lee Jacksonville, Fla Major W S Bryant, brigade surgeon, late Asst Surgeon 1st Massachusetts Artillery Capt Benjamin Munday, Asst Surgeon U S A, and Acting Asst Surgeons Slids B Post and John K Rainey To the U S general hospital Ft McPherson, Ga Major Wallace Neff, brigade surgeon from Cincinnati, Ohio and Major Wm J Wakeman, brigade surgeon, from duty at Camp George H Thomas, Chickamauga Park, Ga To the Leiter general hospital, Chickamauga Park, Ga Acting Asst Surgeons Chas C Marbury from New York City, Julius Ullman from Buffalo, N Y and Thaddeus Walker from Detroit, Mich To the U S general hospital at Ft Monroe, Va. Acting Asst Surgeon John R Hicks from the steam ship *Manitoba* To the U S general hospital, Ft Myer Va First Lieut Albert E Truby, Asst Surgeon U S A recently appointed, from Otto, N Y To the U S general hospital at Montauk Point, Long Island, N Y Acting Asst Surgeon T G Holmes from Detroit, Mich To the hospital ship *Missouri* at New York City Capt Alex N Stark, Asst. Surgeon U S A Resigned Majors Charles E Ruth and Willis G McDonald brigade surgeons, and First Lieut R Mark, Asst Surgeon, 3d North Carolina Infantry

CHANGE OF ADDRESS

Chance, B K, from 1610 Christian to 118 South 17th Street, Philadelphia Pa

Corbell, R L, from Chuckatuck to Port Norfolk Va

Caldwell W S from Freeport Ill to Sioux Falls, S D

Freeman B F from New Palestine to Ridgeville, Ind

Goff J V, from Tuscon to Ashfork, Ariz

Hodges, F J, from Anderson Ind to Ashland Wis

Holland J W, from Holderness, N H to care The Checkley, Prouts Neck, Maine

Zeller, J O, from Ann Arbor to Skanee Mich

LETTERS RECEIVED

Bremmer, H A, Merritt Ill, Burnett Swan M (2) Washington, D C Bruner, W A, Cleveland, Ohio

Coley, W B, New York, N Y, Clark, C F, Columbus, Ohio Cokenower, J W, Des Moines Iowa

Dewar, J B, Cedar Springs, Mich

Egbert, J Hobart Holyoke Mass Engels E Fletcher, Chicago, Ill

Fairchild, D S Clinton Iowa

Gihon A L Sykesville Md Gould, Geo M (2) Westfield, N Y, Green, C C Beaver City Neb

Huffman, G W, Defiance Ohio Hall, A D Book Binding Co, Appleton Wis Hughes, D L, Keokuk, Iowa, Harrah, W S Washington, D C Harris Geo T Falls of Rough Ky

Irving, W T Dark's Mills Tenn

Johnston, Geo W Washington D C

Kreider Geo N Springfield, Ill Klopinger, J C Union, Ohio Karger S Berlin Germany

Labbé D Paris, France Lovers, F F Red Canon, Wyo Link, J A, Springfield Ohio

Moore C R Chicago, Ill Moore J S Grant s Pass, Ore McIsaac, Isabel Chicago Ill, Murphy, T C, Manito Ill Marcy, H O Boston, Mass Millbury, F S Brooklyn N Y Magruder G L Washington D C, Matthews & Swartz, Pine Bluff, Ark May, J M, Meridian, Miss Markley, P L Rockford, Ill

Noland, C C, Rockwell City, Iowa, Norstrom, H, Boone, Iowa Nichols H B, Pultoney N Y, Norwich Pharmacal Co Norwich, N Y

Pynchon, E Chicago Ill, Parker W T Asylum Station Mass Philadelphia Medical Journal Philadelphia Pa Pease, F P, Buffalo, N Y

Reedy, F S, Colorado City Colo Raymond J H, Brooklyn, N Y

Senn N New York N Y Smart Chas (2) Washington D C, Smith, W T Hanover N H Seeley W K, Dubuque Iowa Spalding, J S, Chicago Ill Stevens A M Ann Arbor Mich Spivak C D, (2) Denver Colo Short J L Rolla Mo

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Ward Montgomery & Co Chicago Ill Wisman, J L Frontier Mich White F Elwyn Pa, West, H A, Galveston Tex Wyckoff, R M, Brooklyn N Y Wood & Co, Wm, New York, N Y Whitford, W (2) Chicago, Ill

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ORIGINAL ARTICLES

PNEUMATURIA

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association, held at Denver, Colo June 7 10, 1898

BY H. A KELLY, AND W G MacCALLUM
BALTIMORE, M D

During the last two centuries observations of the passage of gas with the urine have been made from time to time by various authors, and lately a number of very detailed accounts of this phenomenon have appeared Brierre de Boismont in 1825 mentioned the spontaneous production of gas in the bladder and considered it due to a sort of flatulence or secretion of gas by the bladder mucosa Roche confirmed this and Chomel added to the suggestion of gaseous secretion from the membrane, the idea that the gas might be due to fermentation But up to 1860 practically all the instances were in cases of fistulous communication between the bladder and intestine, and when in that year Raciborski was called to treat a man who passed bubbles of gas from the urethra he first satisfied himself that there was no vesico-enteric fistula, before describing the case as one of spontaneous development of gas in the bladder

The cases of pneumaturia may be roughly divided into three groups

1 Those in which air is mechanically introduced into the bladder from without

2 Those in which gas develops in the urinary tract through the agency of some fermenting organism

3 Those in which there is a communication between the bladder and an air-holding viscus

The first group is of little practical importance, as the discomfort is transient and the phenomenon has no pathologic significance The introduction of air may occur during irrigation of the bladder if the apparatus used is not emptied of air before the fluid is allowed to flow More commonly is the condition brought about by the knee-breast position occupied by the patient during the cytoscopic examination as practiced by Dr Kelly, when it forms the basis of the method of examination—the sagging of the viscera produces a negative pressure on the bladder walls which is neutralized as far as possible by the amount of air distending the bladder After such examination when the patient is replaced in the dorsal position the air should be pressed out through a catheter, as otherwise the distention may cause considerable pain The operation of lithotomy and the vesical operations are also sometimes followed by passage of gas into and out of bladder

The second group of cases depends on the invasion of the urinary tract by some organism which by its action on the urine produces gas In most of these cases the gas was produced in the urinary bladder, but in a few the kidney was evidently the seat of the infection, and in one there was a general distention of the whole tract

Since as yet we know so little of the etiologic factors in these cases we can hardly attempt any division of the cases on such a basis Up to the time of Favre, who isolated an organism in 1888, no attempt was made to recognize the causative agent [1] Most of the cases described occurred in middle-aged or old men, where there had been for some time some obstruction to the flow of urine—such as an enlargement of the prostate or gonorrheal stricture—in others there were vesical calculi In two cases there was paralysis following myelitis Of the sixteen cases described nine were found to have glycosuria The data are not sufficient to determine the reaction of the urine in all cases but the majority were acid up to the time when the determining factor of the pneumaturia appeared—that is the catheterization, sounding, lithotrity, lithotomy, etc , one of which was performed in practically all the cases and was very quickly followed by the passage of gas The reaction of the urine after the introduction of the organism by the catheter varies with the nature of the infection

In three cases (those of Heyse, Guiard, and Pére) there is no definite history of catheterization before the emission of gas, but there was an increase in the amount of gas after such instrumentation, and it is now practically universally recognized that such introduction of the infection by means of instruments passed into the bladder is the essential factor in the production of pneumaturia of this type

The various conditions described as existing previous to catheterization or sounding are predisposing causes The residual urine present in the bladder when there is some obstruction to free egress forms a favorable medium for the growth of organisms and other slight infections, associated with the presence of an obstruction and atony of the bladder, or with the presence of vesical calculi, are often favorable to the invasion of the gas-forming organism Further, stress has been laid by Guiard and others on the importance of the presence of sugar in the urine in the production of pneumaturia, and indeed in the sixteen recorded cases there was glycosuria in nine, with one more doubtful case Guiard himself reports four such cases Dumesnil, Ralfe, Müller, Senator and Pére report others Of these cases the organism was recognized in only two, that of Senator, where there was a yeast, and that of Pére, where a bacillus resembling the bacillus coli communis was the gas producer

In sugar-free urines the formation of gas has been observed in several cases, and from the number Favre, Schow and Heyse have made detailed bacteriologic studies The organisms described by these authors are almost identical, differing only in details, in which there is always some variation They all belong to the group of which the bacillus coli communis is the type, and Heyse has identified the organism in his case with the bacillus lactis aërogenes Schow names the one found in his case coccobacillus aërogenes vesicæ The following are the main characteristics of the three organisms, they are plump, short rodlets sometimes occurring in pairs they grow aërobically on the various media, forming gas in the gelatin stab cultures and not liquefying the gelatin Favre's bacillus is motile, Schow's slightly so and Heyse's non-motile Favre's form shows an inequality in staining, suggesting the formation of spores Urine media become alkaline after the growth of the organisms excepting Favre's, which produces acid Heyse's bacillus is said to produce acid also by changing lactose into lactic acid The organisms are pathogenic to rabbits Heyse's also to guinea-pigs and mice The gases produced are carbon dioxid, oxygen, nitrogen, hydrogen and marsh gas

One of the cases in which the bladder was found distended with gas is described by Welch and Flexner In this case the organism was the bacillus aërogenes capsulatus (Welch) which is distinguished by its size and aerobic growth The gas produced was chiefly hydrogen and burned with blue flame

As to the actual mode of formation of the gas we have various ideas Guiard upholding his claim that glycosuria is the basis of all such pneumaturias, considers it an alcoholic fermentation, with the liberation of CO_3, and thinks we should find alcohol in the urine, and this has been actually done by Senator, who found in the case where a yeast was the aerogenic factor alcohol in the urine and CO_2 as the gas

Obviously this is the explanation of the decrease in the sugar in the urine of diabetics after the beginning of a cystitis, and the formation of the fatty acids as an extension of the process explains the acidity of the urine in such a case

In the cases where the urine is sugar-free the analyses of the gas produced have showed the presence of CO_2, and H,N,O, and CH_4 have also occurred, but it is suggested by Senator that these are absorbed merely from the blood Just what is decomposed in sugar-free urine by the organisms is still doubtful

The quantitative analyses vary so much that it is difficult to draw any general conclusions from them In all, however, hydrogen forms the main bulk

Other suggestions are offered as to the formation of the gas Ralfe thinks that during the formation of acetone from aceto acetic acid in the urine of diabetics gas might be developed Kehrer, in describing a case of hydronephrosis in which the hydronephrotic sac was distended with gas, suggests that from the remains of the kidney tissue normal acid urine was secreted at intervals and that this set free the CO_2 from the carbonates in solution in the stagnating urine in the sac

The symptoms in these cases are not very striking There may be continual desire to urinate, but it is rather a result of the cystitis than of the presence of the gas, which collects in rather small amounts The passage of the gas per urethra causes no pain, but rather a tickling sensation, and is accompanied by a souffle or even by a distinct explosive report, or a musical sound The bladder tympany may extend almost into the umbilical region at times, but unless the patient be actually inverted, the curve and situation of the urethra is such that no gas passes until after most of the urine has been passed The gas may pass in such large bubbles as to give rise to intermissions in the flow of the urine, or if in very small quantity it may merely form froth at the end of micturition

Recovery occurred in practically all of the cases, the urine clearing up and again becoming acid treatment with antiseptic lavage often greatly hastened this The fatal termination of a few of the cases was due rather to infection of other organs than the bladder—pyonephritis with uremia

Rather distinct from this class of cases is the group forming perhaps part two of the second division—those cases where the gas is produced in the kidney and ureter rather than in the bladder itself Of such cases three have been reported, and a fourth has occurred during the last year at the Johns Hopkins Hospital in my own clinic LeDentu in his textbooks cites a case observed by Lannelongue in a child aged 8, where there was a voluminous tumor in the right flank, at first mistaken for the liver On aspiration 500 c c of a greenish fluid was obtained, together with a gas composed of oxygen, nitrogen and carbon dioxid At autopsy the tumor was shown to be a renal cyst LeDentu himself perfromed nephrectomy in a case where there was a renal calculus and an accumulation of gas in the kidney This gas, as in the case of Lannelongue, was composed of oxygen, nitrogen and carbon dioxid, and he gives it as his opinion that the gas was absorbed from the blood In the case of Tisné there was pyonephritis, with formation of a perinephritic abscess following obstruction from an enlarged prostate, evacuation of the abscess put an end to the discharge of gas from the bladder The history of the case observed at the Johns Hopkins Hospital is briefly as follows

Mrs J H , aged 36, married fifteen years II para, normal labors About four months after marriage noted pain on urination Two years later began to pass minute white calculi and during the next four years passed three larger calculi with much pain At present has pain and swelling in left lumbar region and constant pain in bladder, especially just before urination , the urine always contains pus , for one year has passed gas from urethra in large amounts Left kidney is felt as a hard tumor the size of two fists

Cystoscopic examination No 10 cystoscope Bladder mucosa normal Right ureteral orifice easily found and normal in appearance and the urine clear issuing from it. The left ureteral orifice found by seeing issuing from it pus and gas bubbles This was wiped away and the ureter easily discovered surrounded by a reddish area On pressure over the kidney pus could be squeezed out of the ureter, and mixed with the pus were numerous air bubbles On attempting to pass a metal catheter, a stricture of the lower portion of the ureter was discovered A flexible, wax tipped one and one half mm catheter was easily passed on first attempt and entered to the kidney , no scratch marks on the wax Pus withdrawn was thick, viscid and of a foul odor

Nephrotomy was done and a drainage tube inserted into the kidney, after evacuating the gas and washing out the pus which was found in its cavity The patient made an uninterrupted recovery

Cultures from the kidney were not definitely successful in isolating a single organism Coverslips from the pus showed various forms, slender bacilli in chains, stout bacilli in chains and groups of cocci or short bacilli beside diplococci resembling the pneumococcus The cultures showed mainly coccus-like organisms which did not liquefy gelatine, although the growth was here, as on agar, abundant , litmus milk decolorized and coagulated with the formation of acid , no formation in lactose agar nor in urine lactose agar Scant growth on potato and in bouillon the bouillon becoming clouded

In the last group of cases the gas reaches the bladder through a fistulous communication with some air-holding viscus, which is in the great majority of the cases the intestine Observations on such fistulas have been rather numerous, and the literature has grown to a considerable extent, especially in the last fifty years Among the most important publications are those of Blanquinque and Harrison Cripps, the latter of whom reviewed sixty-three cases in the literature Chavannaz within the last few months has written very fully on the subject, considering, however, only such fistulas as occur in men

Communication between the bladder and intestine may originate in the most various ways, and the cases may be roughly divided as follows 1, congenital fistulas, 2, cases of traumatic origin, 3, cases in which the fistula results from necrosis of tissue between the cavity of the bladder and that of the intestine

Savoy and Minich have described cases of atresia ani in very young children, in which the intestinal contents were evacuated through the bladder by way of a fistulous connection between the bladder and the rectum This was probably a congenital malformation rather than the result of the accumulation of the feces Treatment by the restoration of the natural anal orifice resulted in the cure of the condition

Traumatism plays a relatively small part in the production of vesico enteric fistulas, and the fistulas so formed are much more amenable to treatment than those in which the formation is associated with a diseased condition of the adjoining tissues Billroth and Fischer have reported cases in which passage of gas through the bladder followed wounding of the rectum in lithotomy and in the cases reported by Dittel, Johnstone and Canton the fistulous perforation was due to violent catheterism Gunshot wounds, stabs, protracted labors and retention catheters have been the cause in other cases, but by far the most common, traumatic origin seems to be in wounds of the rectum caused by falling on some sharp object, which, entering the rectum, passes through the intervening tissues into the bladder

The tissues being in good condition, healing often takes place if the patient is merely kept at rest and the bladder and rectum kept as free as possible In most of the cases frequent catheterization or the introduction of a retention catheter has been resorted to Chavannaz states that the traumatic cases form 13 86 per cent of all cases in men, but if we consider the fistulas in women, also, this is a rather too high estimate, and the figures approach more nearly to 11 4 per cent of all cases

The non traumatic fistulas are produced by the necrosis of tissue between the cavity of the bladder and that of the intestine, after these organs have become adherent or by the necrosis of the walls of these organs, so that communication is established through an intervening cavity, such as an abscess cavity

The old division of these cases into cancerous, tuberculous and inflammatory is adopted by Chavannaz, but it is sometimes rather misleading and the dividing lines can never be sharp In almost half of the cancerous cases the cancer is only indirectly the cause of the fistula in that it forms a stricture of the intestine, the fistula being produced at a higher level Chavannaz in his statement that the cancerous cases form more than 20 per cent of all the cases seems to overlook this—the percentage of fistulas actually due to the breaking down of a cancer, involving both bladder and intestine, is probably under 10 per cent Several English authors, Hunter, Blizzard, Heuston, Richardson and others have described such cases where the fistula was directly due to the invasion of the bladder wall by the carcinoma, and the subsequent breaking down of the mass Tavignot, Peron and Czerny have also described similar cases

Stricture of the rectum seems to have a very important influence in the production of fistulas, whatever may be the origin of the stricture, although no writer has laid especial stress on this point The intestine above the stricture becomes distended and feces stagnate there, indeed a complete lining of feces may be formed with a secondary lumen through which the liquid stools pass, and such stasis, combined with the severe straining at stool to produce an inflamed condition of the intestinal wall and peritoneal adhesion, are followed by ulceration through the wall into the adjoining bladder Foreign bodies which have become lodged above the stricture often aid in this process

From the side of the bladder the causation of fistula is very doubtful Stricture of the urethra has probably only a predisposing influence in causing cystitis, etc Mercier describes two cases in which the autopsy showed that ulceration had occurred at the bottom of several of the sacculations or cellules in the bladder wall, and that communication with the intestine had originated in this way

Calculi have been said to ulcerate through the walls, especially if they have become lodged in depressions, but as Chavannaz remarks, they are more probably the result than the cause of intestino-vesical fistulas Further, fistulas have been ascribed to the long continued use of stiff retention catheters and sounds, necrosis of the vesical wall occurring where the beak of the sound pressed upon it also to the presence in the bladder of long, hard, foreign bodies introduced from without for various purposes

Probably the largest group is formed by those cases where at autopsy there is no stricture of the intestine nor any carcinomatous mass, but instead peritoneal adhesions between one or more loops of intestine and the fundus of the bladder, with perforation at the point of adhesion These adhesions may be limited to a very small area, merely forming a thick wall for the fistulous tract, or they may be very extensive, matting the intestines Flanner describes such a case where the matting was due to a tuberculous peritonitis and Robouam another where, among the coils of adherent intestine, there was a large abscess cavity communicating with the intestine and with the bladder Frequently the communication is not direct, but through a space walled up by adhesions from the peritoneal cavity in which there is a collection of intestinal contents, urine and pus, and sometimes foreign bodies Chavannaz has found such a *foyer intermediaire* in 22 10 per cent of the cases The course of the fistulous tract is thus not always direct, in some cases the openings are directly opposed, in others the canal is long and tortuous after running for some distance between the coats of the intestine and bladder This disposition may result in a valvular action of the fistula so that materials can pass only one way

Fistulas have resulted in various other ways Rupture of abscesses in the pelvis, into the bladder and intestine, has occurred in a considerable number of cases This is especially freq[illegible] here tubal abscesses and other sup[illegible] the [illegible] cc [illegible] In [illegible] cond[illegible] some [illegible] ltho [illegible] it is somewhat remarkable that in Chavannaz's statistics the appendix is concerned in the formation of such fistulas in only one case or 1 85 per cent Very recently Fowler of New York has reported a case in which an appendix abscess was probably the cause of the fistula

Connection of the two organs by means of an adherent cystic ovary has been described by Simpson, and in an inaugural dissertation Griessler described the formation of communication between the bladder and intestine after the rupture of an extrauterine pregnancy, with discharge of fetal parts through the various channels Finally, Schoepffer relates the case of a child in which the breaking down of a small-celled sarcoma of the intestine, which had become adherent to the bladder, gave rise to the passage of intestinal contents into the bladder

Another class of cases originates in tuberculous and suppurative processes in the tissues between the rectum and the bladder Tuberculosis of the prostate passing into cheesy degeneration with discharge both ways is the basis of several cases, while gonorrheal abscess of the prostate and neighboring tissues may have a similar result

The situation of the orifice of the fistula is rather important in determining the symptoms and governing the treatment Chavannaz's statistics are as follows, in the cases in which the point was determined by autopsy In 44 44 per cent the communication was with the rectum, in 24 07 per cent the communication was with the sigmoid, in 11 11 per cent the communication was with the colon, in 7 40 per cent the communication was with the colon and ileum, in 1 85 per cent the communication was with the appendix

The intestinal as well as the vesical orifices may be multiple and may be situated in different sections of the intestinal canal This of course complicates greatly the operative treatment, and in the intraperitoneal treatment of such cases the question arises as to whether it is better to resect the intestine or to perform a number of lateral sutures It will be readily seen that since the rectovesical fistulas form such a large percentage of the cases we may expect to find the majority of all the cases in men, and indeed Chavannaz's statistics uphold this in showing that 70 per cent of all the cases were in men

Affection of the kidneys is relatively uncommon, the bladder seeming to act as a protection against the passage of the infection up the ureters Purulent and ammoniacal cystitides may, however, occur, and obstruction, due to the blocking of the urethra by the fecal matter is not infrequent

The symptoms vary with the nature and origin of the lesion There may be no symptoms whatever previous to the passage of gas, and later of feces, from the urethra, or frequent and painful micturition may occur during the formation of adhesions and the general signs of a local inflammatory process may be present Passage of gas is always the most constant symptom and may precede the passage of fecal matter through the urethra Of course pneumaturia is not an invariable accompaniment of vesico enteric fistula, all the material transmitted by the fistula may pass the other way and we may have clear urine and urinous stools Indeed, the passage of urine per rectum is very common, and especially noticeable when the intestinal orifice is low in the large intestine The urine in the intestine may cause a diphtheritic inflammation of the mucosa, giving rise to a constant diarrhea The passage of gas into the bladder is rarely perceived, but in some cases it may give rise to an immediate desire to urinate From the urethra it may be passed with wheezy or even with a loud noise, indeed, one patient described by Wegscheider, was nicknamed "die Luftschifferin" on that account The quantity is variable, but the odor is generally fecal, unless, as in the case of Jewett, the opening into the intestine is very high It generally appears at the end of micturition and is sometimes affected by the position of the patient, being passed only when he is in the erect position, etc Fecal material passes with the urine in variable amounts, sometimes enough to form a slight granular sediment, sometimes in such mass that the urine has the appearance of thick soup At other times the fecal material may form more solid masses or be forced through the urethra in cylindrical moulded lengths Foreign bodies, such as bones, seeds, etc, sometimes pass through the urethra, causing great pain Ascarides have been passed at intervals in some cases, notably that of Krachowizer, and thought to have been the cause of the fistula, but other authors have suggested that it is more probable that the ascarides merely took advantage of the already formed fistula When the opening is high up in the intestine the intestinal contents, as they reach the bladder, may, as in the case of Jewett above referred to, be so little changed that the whole food of the patient can be recognized The discharge of fecal matter through the bladder may be intermittent, ceasing for days at a time, or appearing only when the intestinal contents are fluid, as for example after a purge The gas is, however, rather more constantly passed Micturition may be frequent and painful although many patients have no pain whatever

The stools are very frequently affected by the connection of the intestine with the bladder, there often being a continual diarrhea In some cases a formed stool may be followed by a completely liquid one, the sphincter being able to retain the fluid which has reached the intestine, so that a large amount passes at once at stool, instead of a continual dribbling The symptoms are fairly well illustrated by the following cases, which occurred lately at the Johns Hopkins Hospital

Case 1 —Mrs C A , aged 60, came complaining of the passage of gas and feces through the bladder Her family history and early personal history throw no light on the present illness In February, 1896, she began to have a pain in the lower abdomen, urine was thick, with a brown sediment, and very offensive for the first two months Gas began to appear with the urine in June In July, being constipated, she took licorice powder and the resulting movement passed through the bladder, was better then for a a time In October she submitted to an operation for the cure of a suburethral abscess For several months the passage of feces ceased In April, 1897, it grew worse and she passed a great deal of feces and gas with the urine In July the discharge ceased a little, gas occasionally present In November had severe attacks of intestinal pain and passed from the bladder what she thought was its lining Since November the discharge has been rather less up to January, 1898, when it grew worse again The presence of gas in the bladder was associated with a continual desire to urinate —never was there any pain from distension, however *The gas was discharged* with a loud sound easily heard by those in the room or even in the next room It had a fecal odor Sometimes some pain in the abdomen on passage of gas Not much pain in urethra except when the suburethral abscess was present. Controlled the gas as she did the urine Since January has passed a great deal of feces through the bladder, the amount being increased when the bowels do not move with sufficient frequency The urine showed the presence of a brownish sediment containing striped muscle tissue, partly digested vegetable shreds, starch, an egg of trichocephalus dispar, pus, granular and hyaline casts Cultures and cover slips showed the intestinal bacteria The urine contained albumin and an increased amount of indican

On administration of bismuth subnitrate by mouth the characteristic black crystals of bismuth sulphid appeared in the urine So also injection of a blue solution per rectum colored the urine blue

Cystoscopic examination of the bladder gave the following A No 11 speculum introduced and bladder expanded to 63 cm from internal urethral orifice to posterior wall

In the posterior hemisphere the capillaries are much increased, this increased capillary vascularity becoming more marked toward the base of the bladder, where there is a uniform rosy injection

Irregular deposits of pus over the base of the bladder, which is deeply injected A No 13 speculum introduced and a calculus extracted with mouse tooth forceps, together with two small bits In posterior hemisphere on the left, at the junction of the upper and lower quadrants, is a puckered surface extending slightly crescentic upward (knee chest position) with its canal directed upward and backward about 8x3 mm The borders are deeply injected over an area about 3 to 5 mm , but beyond this the surrounding tissue is comparatively normal,

Right ureter is deeply injected around its orifice and almost exactly in the median line, the left ureter is displaced to the left There is around the right ureteral orifice a membranous deposit almost pure white, and cover slip from this showed it made up of short bacilli and pus cells

Rectal mucosa normal

At operation the sigmoid flexure of the colon was found adherent to the bladder at the vertex on the left side Area of adhesion 2.5 mm in diameter, free on all sides so that the finger can be hooked under it, lifting it from the pelvis

The two organs carefully dissected apart, protecting the peritoneal cavity with gauze, fistula 2 mm in diameter cut through. Vesical orifice brought together by means of interrupted catgut sutures making a line from above down and to the left 4 cm long Dense fibrous tissue was then cut off the rectum, and mucosa lining the fistula cut out, making the opening into the bowel about 2 cm long, with shelving sides in healthy tissue, this also closed with interrupted silk sutures about 2 mm apart. Salt solution irrigation of the peritoneal cavity Abdomen closed without drainage Bladder drained by retention catheter and occasionally washed out.

The patient made a perfect recovery, the urine clearing up at once and the passage of gas ceasing immediately Convalescence has been uninterrupted

Case 2 —Miss J , aged 57, admitted to the Johns Hopkins Hospital in November, 1890 Menses regular up to age of 48 At 42 had swelling of legs with vaginal hemorrhages, since age of 50 these have occurred at intervals Have grown worse lately

Right and left tubo-ovarian masses made out. Celiotomy was performed and the tubo ovarian cyst on left side dug out of adhesions in lower part of pelvis Cyst ruptured, discharging 30 c.c of thick, sticky, mud like substance Right tube and ovary also removed, foul odor suggested an opening into bowel Pus discharged from uterine cavity came from a tumor in the body of the uterus

Patient recovered In March, 1896, she was readmitted, complaining of general pelvic pain Vaginal puncture was performed, evacuating dark fluid blood and clots from a sac between uterus and bladder, puncture being performed in front of the cervix.

She was then passing bubbles of air at the end of micturition and there was pus in the urine Cystoscopic examination showed an orifice 1 5 mm in diameter in the left lower quadrant of the posterior bladder wall, from which pus exuded , a sound was introduced about 1 cm into this In March, 1898, at age of 64, she consulted Dr Cullen, who found on examining the bladder a slight injection around the trigone and a marked reddening above and to the left side, no opening could be made out, although bubbles of gas and particles of feces could be seen coming from the injected area Injection of milk into the rectum appeared at once in the bladder March 23 the abdomen was opened and the upper left side of the bladder found firmly attached to the rectum just at the pelvic brim. The adhesions were gradually separated and a firm cord 1 1 mm in diameter found connecting the gut with the bladder This was cut through at the expense of the bladder [illegible] edges of the rectal opening were then turned in and closed by two rows of mattrass sutures Vesical [illegible] ilarly closed The patient did well for twenty four [illegible] her weakness was such that she succumbed [illegible] peritonitis nor hemorrhage

In this case it is probable that the stump of the left tube had become adherent to the rectum after the removal of the appendages eight years before, and that in this way the bladder was drawn up snugly against the rectum Adhesions soon formed, and the fistulous opening followed in the same way that a dermoid cyst may become infected from the intestine after adhesions have formed

The diagnosis of the condition is generally easy Passage of gas, together with fecal material, is practically pathognomonic of the existence of fistula, although the passage of gas alone is not so The blackening of a silver sound in the bladder occurs also in those cases of hydro-thionuria described by Rosenstein, Scott and others, so that that test in showing the presence of sulphuretted hydrogen, does not necessarily demonstrate the presence of a fistula Colored injections into the rectum or into the bladder have been used very frequently, and when they give positive results are important The most useful of these solutions are those in which the coloring matter is in suspension, rather than solution, as some materials such as methylene blue are readily absorbed and secreted in the urine Milk, suspension of carmine, prussian blue, etc , have been used In other cases solution of some easily recognized chemical such as the salts of iron, have been injected and the urine appropriately tested Exploration of the bladder by means of a sound does not give the certain results ascribed by some authors, but rectal examination is of extreme value in many cases Chavannaz lays stress on the bimanual recto-abdominal palpation Perhaps the most important of all is the direct cystoscopic examination either by means of the Nitze-Leiter cystoscope, or better by inflation of the bladder with air and direct examination with the vesical speculum, as was carried out in the cases just reported

The gravity of the prognosis depends, to a great extent, on the etiology, position and size of the fistula Generally speaking, those of traumatic origin much oftener terminate favorably than those of inflammatory origin, indeed, there are reported several cases of healing after a mere rest treatment In the carcinomatous and tuberculous cases the mechanical results of the fistula are superadded to the effects of the primary disease In the cases of intestinal stricture the prognosis is modified by the presence of the stricture, which limits the operative measures for the cure of the fistula In many of the cases where the fistula is small and does not transmit a great deal of material to the bladder, the patient may live years in comfort, the passage of gas alone with the urine may go on for a very long while without any inconvenience, but when the opening is larger there is constant danger of obstruction of the urethra and choking of the bladder with feces, uremic symptoms may develop followed by death Renal symptoms are comparatively rare when we consider the condition of the bladder The formation of a sac in the course of the fistula between the bladder and intestine adds greatly to the gravity of the prognosis, as there is an accumulation with absorption of toxic substances

Apart from the mechanical results the general health may be disturbed When the fistula is high up nutrition is interfered wi [illegible] contents of the upper int[illegible]ne [illegible] instead of thro[illegible]

[illegible]

T[illegible]

treatment consists in such general measures as promote the comfort of the patient by decreasing the amount of fecal discharge in the urine and keeping the rectum and bladder washed clean A rigid régime of food producing but little feces should be observed, the patient may be kept in a position such that gas only passes into the bladder Iliac colostomy may be considered palliative, like enteroanastomosis, it has in some cases proved curative, as reported by Pennell, Holmes, Bryant and others

Curative treatment is in most cases operative The operations that may be performed in cases of vesicorectal fistula are more numerous naturally than those suitable for fistulas into the intestine higher up Briefly these methods are, as described by Chavannaz

1 The rectal method in which the edges of the fistula are freshened and sutured through a speculum inserted into the rectum

2 The transvesical, in which an extensive suprapubic cystotomy is done and the vesical orifice sewed up after freshening the edges, the sutures being knotted inside the bladder

3 In the perineal method a dissection is made through a perineal wound, separating the rectum from the prostate and reaching the cul de sac, freshening and suture of the fistula is then carried out if practicable

4 Resection of the sacrum with a gradual separation of the rectum has been advised

5 The transpelvic operation with an incision through the pubes, or symphyseotomy and subsequent dissection backward

6 Most satisfactory of all, both for intestinal and rectal fistulas in the hands of an experienced surgeon, is the transperitoneal method described in detailing the case of Mrs A, although there are some cases where the fistulous tract is deeply sunk in the pelvis, where this method would be very difficult to apply

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THE ASEPTIC ANIMAL SUTURE ITS PLACE IN SURGERY

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Modern surgical technic differs in such a marked degree from the methods of even a recent period, that it is not a wonder that great differences of opinion still exist in regard to many questions pertaining to the treatment of wounds For the present, at least, certain conditions of fundamental type may be accepted as settled, so far as the theory, or ideal, aimed at is concerned, for example, a wound made in aseptic, well vitalized tissues, and maintained aseptic will be followed by primary union It is not my present purpose to discuss the methods for maintaining a wound aseptic only so far as pertains to its closure and subsequent protection

In any considerable wound it is necessary to occlude blood vessels and rejoin the separated structures This must be done by the use of ligatures and sutures The material best adapted for this purpose is the subject of the present inquiry The materials in use are, thread made from hemp, linen or silk, almost exclusively the latter, metallic sutures, iron, gold and silver, silkworm gut, catgut, and the tendon of animals, especially that from the tail of the kangaroo

The silk fiber, spun, twisted or braided in various sizes, is so manifestly superior to the vegetable fibers of cotton, hemp and linen, that only silk merits discussion Silk has continued in more general use as a ligature for the following reasons It is strong, is manufactured into a thread that is very smooth and even, can be readily sterilized by wet and dry heat, is comparatively cheap and easily obtained in any desired size Until it was found possible to close and seal wounds without drainage, silk seemed the ideal material for ligatures and sutures Then it was supposed necessary to remove both ligatures and sutures, no matter how applied When it was shown to be unnecessary and even harmful to drain aseptic wounds, the inquiry naturally arose, can not some material be found for sutures which will remain in the tissues sufficiently long to serve the purpose of constriction or coaptation, and ultimately disappear under the influences of the vital processes of the surrounding structures?

So far as the ligation of the larger arteries is concerned the problem thus presented is by no means new The most important of the original studies in this direction of an early type were conducted by Dr H G Jameson of Baltimore, and his prize essay published in 1829, upon the closure of arteries in continuity by the use of the animal ligature is worthy of commendation as a contribution of the highest scientific importance It is singular to note that many of the leading surgeons of this period accepted his teachings as of great value, and ligated arteries as Dr Jameson directed, using for material, more commonly, carefully prepared strips of buckskin These were experimented with, somewhat, by English surgeons and met the approval of even Sir Astley Cooper The directions were explicit, to ligate so as to occlude, but not to devitalize the artery, cut short and leave the ligature in the deep part of the wound

The list of experimental studies published by Dr Jameson demonstrated that the result of such ligation in the calf, dog and sheep caused a permanent occlusion of the artery, that the foreign material was encapsulated by living cells, and that ultimately the ligature entirely disappeared, leaving in its place a permanent reinforcement of connective tissue

However, all this valuable experience was lost and forgotten in the heated controversy over the so called inflammatory processes in wounds, which promised a fruitless and endless discussion, until the masterly studies of Lord Lister demonstrated the cause of the same to be vital and extraneous He naturally arrived at the theoretic conclusion that, in a non-infected wound, the vital processes would be ample to permit of the safe application of an absorbable ligature for the constriction of an artery So far as I know, Mr Lister was utterly ignorant of the demonstrations of Dr Jameson referred to above, and as the laws of England at that time were so framed that studies upon the lower animals, even of such an important character, were not permitted, this great master was obliged to resort to France for the privilege of pursuing his investigations His conclusions are almost identical with those of Dr Jameson He used for ligature material, however, catgut as furnished for musical instruments, steeping it in a strong carbolic solution in order to render it antiseptic

So far as I am aware it had not occurred to any to make use of sutures deeply implanted in wounds, *buried*, until in 1870, when [illegible] came ver[illegible] ent to me that it was nece[illegible] e pu[illegible] hernia to close [illegible] erent [illegible] the abdominal wall and to restore the inguinal canal to its normal oblique direction

Based upon the knowledge of the animal ligature left *in situ* about an artery, it seemed a logical deduction that this could be safely effected I instituted at once a series of comparative studies in order to ascertain if such suturing was safe and trustworthy My investigations proved conclusively that aseptic animal structures buried in well-vitalized tissues were surrounded by leucocytes, which, little by little, invaded the material used and pari-passu were themselves transformed into connective tissue-cells, taking in a considerable degree the shape and direction of the suture material So noteworthy was this, that at first I was constrained to believe that the material itself became revitalized as a sort of graft, but more careful observations demonstrated that the foreign material disappeared by a process of absorption, leaving in its place a vitalized band of connective tissue, the resulting product of which, in certain conditions, proves to be of the greatest value, to-wit, where the integrity of the parts are liable to damage because of tension, e g , as in hernia and all wounded structures subject to special mobility It gradually became evident that a careful coaptation of wounded tissues could be safely made, thus avoiding pockets of blood or serum, and, as a consequence, do away with the use of drainage-tubes, then supposed absolutely essential

The drainage-tube in *aseptic* wounds can be only a damage and used as the least of two evils, since so much of the wound as is occupied by the tube must necessarily be left open, and closed by processes of a much slower character, so-called secondary union Again, too, it was soon demonstrated that, notwithstanding the extraordinary precautions taken in the use of antiseptic dressings, a considerable percentage of wounds in which the drainage-tube was used, although aseptic so far as operative measures were concerned, became septic from the introduction of infection along the canal of the drainage-tube, more commonly due to the ever present bacteria pertaining to the skin

One of the most interesting and profitable original studies made in the Johns Hopkins Hospital was the demonstration of the micrococcus pyogenes albus as the normal habitant of the dying epithelium of the skin and their causation of so-called stitch abscesses, when the suture included the skin Now the deduction seemed clear that an aseptic wound to remain aseptic must be coaptated so that pockets can not develop for the undue accumulation of fluids, that the drainage-tube should be abandoned, and that even the skin itself should be closed by a sub-cuticular suture in order to avoid skin infection Then it was apparent that in the devising of the sub-cuticular suture in order to avoid stitch abscesses I had acted wiser than I then knew, and that the ideal dressing should consist of an hermetic seal so absolute as to prevent the possibility of extraneous infection This is found in collodion, the contractile preferred, to which is added a small percentage of iodoform, reinforced by a few fibers of absorbent cotton, which admirably accomplishes the purpose while it still further fixes and holds at rest the evenly coapted edges of the skin and minimizes the cicatricial line of repair Oftentimes a cicatrix is traced with difficulty some weeks after the union of such a wound, a result, which upon certain parts of the body, for esthetic purposes is of the highest importance Having worked out, by slow process of detail, the above conclusions and published[1] the results from time to time, I now thought it was of the first importance to demonstrate the kind of suture material best adapted for this purpose, viz , buried sutures

Material—Silk is manifestly unfitted, since, to say the least, when aseptically implanted in the tissues, it rarely, if ever, disappears by a process of absorption, and not seldom after a long period of discomfort, the structures rid themselves of it, attended with a considerable amount of suffering, with injury to the surrounding parts

When silk sutures are buried, it is unquestionably better that the thread should be as fine as can be used with advantage The sutures should be interrupted and few in number Even thus carefully applied, it often happens that weeks or months afterward these sutures are thrown off by a process of proliferation, although the wound has been made and maintained aseptic

Silk buried in portions of the body called into special activity is most likely to give trouble So well established are the foregoing objections to buried silk sutures that a general inquiry has arisen, is it not possible to substitute something better in its place? Although metallic sutures were at one time in very general use, for manifest reasons they have been discarded, until now they are limited to a very narrow range of possibilities (Where it is necessary to make a permanent fixation of the osseous structures, the wire suture has an advantage, and here it is intended to be permanently left Even under these conditions, when cut short and buried beneath the soft tissues, wire is very likely to be a source of subsequent irritation) Silk-worm gut is absorbable in such a slow degree that it can be classed as belonging to the non-absorbable material used for ligatures and sutures, and for this reason is almost as objectionable as wire The use of wire and silk worm gut as a buried suture has its advocates for the most part among those who do not feel that animal sutures have a durability sufficient to be trustworthy

I am indebted to Dr Charles P Noble of Philadelphia for a recent reprint of an article entitled, "Remarks upon the Use of the Buried Permanent Suture in Abdominal Surgery," published December, 1896 In it he states, "the original and simple method of a through-and-through suture for the closure of the wound in celiotomy has been tried and found wanting, because of suppuration and subsequent hernia That he has had no experience with the use of catgut or other absorbable material in the closure of the celiotomy wound, because of the unfortunate results reported from Germany " He quotes Winter, who reports 8 per cent of hernias following the use of the buried catgut suture He also refers to the experience of Dr Schede of Hamburg, who has employed silver wire as a buried permanent suture in the closure of celiotomy wounds since May, 1887 He thinks the favorable opinion of Schede is borne out by the experience in the Johns Hopkins Hospital where silver wire has been in general use for a number of years, with a low percentage of suppuration and few subsequent removals of the buried sutures He also refers to the experience of Dr Edebohls of New York, who for a considerable period used silk-worm gut as a buried suture in the closure of the abdominal wall Dr Edebohls reports that from 5 to 10 per cent of all his sutures thus employed caused suppuration and were either discharged spontaneously or required removal in order to secure closure of the wound or suppurating sinuses In his aseptic wounds where primary union had taken place, suppuration followed in some cases in a few weeks, in others after some months, and in one after two years and a half On this account Dr Edebohls now uses chromicised catgut instead of silk-worm gut

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[1] A New Use of Carbolized Catgut Ligatures Applied for the Cure of Hernia Henry O Marcy, M D Boston Med Surg Journal, November 1871 p 315
The Radical Cure of Hernia by the Use of Carbolized Catgut Ligatures Trans Amer Med. Association, Vol 29 pp 295-305 1878
Animal Ligatures Annals of Anatomy and Surgery 1881, p 282
The Animal Suture New England Medical Monthly, June 15 1883
The Surgical Advantages of the Buried Animal Suture Journal of the American Medical Association, July 2, 1885 Reprint

Dr Nobe's object in writing his article is to show that in his experience silk-worm gut has proved a safe and reliable means of closing celiotomy wounds He states, "that he has closed two hundred and ninety-seven celiotomy wounds by the use of buried silk-worm gut sutures with only seven cases of suppuration and with satisfactory results in preventing hernia" He emphasizes the selection of fine gut which is boiled for half an hour before each operation The sutures are not tied too tightly and the ends are cut as short as possible He used catgut for the closure of the peritoneum, the fatty structures and the skin as a continuous suture

Dr William B Coley of New York reports[2] in detail sixteen cases where silk, silk-worm gut and silver wire were used as buried sutures for the cure of hernia In these not alone was the hernia not cured, but suppuration supervened, and the sutures had to be removed Of the number, five were closed with silk-worm gut sutures He reports from the recent work of Schimmellbusch, page 121 "It has more than once been observed that in primary closure of wounds by silk or silver wire; the ligature, at the beginning well imbedded in the tissues, after a long period of time becomes repelled and suppurates out The imbedded silk or silver wire simply remains as a foreign body in the tissues, of which the organism endeavors to free itself as soon as a favorable opportunity presents" He also reports "In two hundred and fifty cases of hernia operations in which I have used kangaroo tendon for buried sutures I have not had a single instance of sinus formation, and the percentage of primary union has been ninety-six per cent" "The ideal suture, then, would be one that would hold the parts in apposition for eight or ten weeks and then disappear by absorption In kangaroo tendon we have these conditions perfectly fulfilled There has never been observed at the Hospital for Ruptured and Crippled a single case of delayed healing sinus when tendon or absorbable suture was used Unless those who use and advocate silk, silk-worm gut or silver wire in hernia operations are able to present some advantages to offset the serious disadvantages that have been demonstrated, I believe these non-absorbable sutures should be entirely abandoned"

Chance furnished me the opportunity of being Lord Lister's first American pupil, and so great was my enthusiasm for the master that I accepted unquestionably his teachings of the value of catgut as a ligature I prepared my own catgut ligatures for some years, according to his directions, and they were undoubtedly aseptic It was not long, however, before infection followed the use of commercial catgut suture material which was obtained from the most reliable sources This led me to investigate anew with painstaking care the animal structures which might be better suited for this purpose I soon ascertained that catgut is necessarily faulty for two reasons, first, as the connective tissue sheath of the small intestine of the sheep, it must necessarily be separated from the other coats of intestine by maceration This is in reality a process of bacterial putrefaction The connective tissue sheath being more resistant to the putrefactive bacteria, remains less injured by it, and as a consequence can be removed entire, but it is necessarily damaged by the processes involved When thus separated and cleaned, although appearing as a white sheath of uninjured connective tissue, it is everywhere teeming with bacteria, and the cement substance which holds the connective tissue cells in fixation has been damaged by their action and by the necessarily long continued maceration So far as I am able to learn, at this stage of the process in the manufacture of catgut no thought of the value of sterilization has been entertained and no effort made for its accomplishment The second objection to catgut as a suture material is the disposition of the connective tissue fibers themselves For the physiologic necessity of dilatation and contraction of the intestine these fibers cross each other in a direction oblique to its long axis The intestinal sheath is divided into strips more or less narrow in order to produce the desired sizes When wet, it is an elastic, flat band with irregular edges This is twisted upon itself into a cord and dried and thus is manufactured the catgut of commerce (strings originally designed for musical instruments)

Such is the extraordinary strength of the connective tissue that even thus disposed, when dry, catgut is very strong, but every musician knows the great care he must exercise in keeping it dry and keyed to the proper tension point When damp it soon becomes soft, elastic and unreliable When catgut is compared with the connective tissue found in the tendons of animals, the illustration is not overdrawn to say that the differences are as great as would result from weaving silk into the finest fabric, cutting it diagonally into strips and twisting it for use as a fishing line When dry, it is comparatively strong, but when wet, a soft, elastic, flat band takes the place of the well-made fishing line The surgeon must remember that his buried suture is ever wet since it is immersed in the fluids of the body This is the reason that catgut swells so extraordinarily upon being soaked, that knots in catgut are unreliable, and the yielding of the ligature may be sufficient to prevent the closure of the enclosed artery In the tendons of animals the connective tissue cells are disposed parallel to each other and held firmly in contact by the cement substance, which in the preparation of sutures should be injured as little as possible Tendons should be taken from freshly killed animals and prepared so that infective decomposition never ensues Their use as ligatures is not new Paul Eve, the great surgeon of Tennessee, employed them in the ligation of vessels many years before Mr Lister's study of the subject He used the tendons of the deer, taken directly from the freshly killed animal

However, the knowledge of the use of tendons for ligatures was unknown to me until after my first publications upon the subject [illegible] resu [illegible] by investigation and research for [illegible] n [illegible] I was so convinced of their superiority that I contributed a paper upon the subject at the International Congress held in London in 1881 Tendons from the whale, the broad fascia of the back of the buffalo and moose (Indian thread) proved of about the same value as the long tendons from the leg of the moose, deer and caribou Although less fatty they were little to be preferred to the tendons from the domestic animals Good ligatures are comparatively easy to obtain from these sources, but suture material must be smooth, even, strong, fine and for a continuous suture, of considerable length to be of service

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[2] New York Medical Journal, Feb 29, 1891

After a prolonged research, I found that the tendons from the tail of a medium-sized kangaroo furnished a material which possessed all these requisites The entire family of marsupials have the psoas muscle divided into fasciculi, each of which has its independent tendon, extending to the very extremity of the tail These lie parallel to each other and are easily separated In the larger kangaroo these tendons are not infrequently thirty inches long, but entirely too large for sutures Many of them will split readily, but are never as strong or satisfactory as the whole tendon from a smaller animal Much the larger amount of kangaroo tendon shipped for commercial purposes is naturally obtained from the larger species, since it is sold by the pound, and by far the greater portion of tendon in the market is consequently less valuable

Good tendon is smooth, even, and of a tensile strength greater than silver wire of the same weight It should be taken from freshly killed animals, quickly sun dried, and kept dry during the period of shipment, and as a consequence, its sterilization is effected with much greater certainty and with less damage to the intercellular cement substance The tendon from the variety called the Wallaby furnishes the best suture material, but so difficult is it to obtain first class tendons, that out of a lot of one hundred and forty pounds recently sent me, scarcely twenty were of first quality

Preparation and sterilization of catgut—The recognition of the advantages attendant upon the use of absorbable suture material has been so universal that a very great many different methods have been experimentally tried in order to furnish from catgut the so-called ideal suture The very fact that so many different methods of preparation have been employed is an evidence that none of them have proved entirely satisfactory Only recently Dr Nicholas Senn[3] of Chicago, has given his experience in the preparation of catgut He approves Hofmeister's method of preparing catgut by the use of formalin With this the profession is already familiar The catgut is rendered tense by winding it upon a glass plate and immersed from twelve to forty eight hours in a 2 to 4 per cent aqueous solution of formalin, then immersed in flowing water for twelve hours to free the gut of the formalin, boiled in water from fifteen to twenty minutes, hardened and preserved in absolute alcohol containing 5 per cent of glycerin and 1/10 of 1 per cent of bichlorid of mercury

Dr Senn modifies the foregoing method by preserving the formalin gut after boiling it, in absolute alcohol 950 parts, glycerin 50, finely pulverized iodoform 100 parts He considers the iodoform of value as a mild antiseptic, and that it diminishes the amount of primary wound secretion He speaks of it only as a ligature, but I infer that he also uses it as a buried suture He quotes from Nusbaum approvingly "Catgut is without doubt Lister's greatest discovery," and states that he considers "the aseptic absorbable ligature as one of the greatest achievements of modern surgery" Dr Ralph C Larrabee of Boston in a recent article[4] gives an interesting review of the sterilization of catgut by boiling in alcohol He quotes Lauenstein's investigations,[5] where, in a large series of cultures made for the purpose, he demonstrated quite a variety of micro-organisms as commonly present in catgut Dr Larrabee shows from his own experimental studies that boiling in 95 per cent alcohol for one hour did not render the catgut sterile, and in each case he obtained cultures of a bacillus Chemically, catgut contains water (23 per cent) and fat (7 5 per cent) By most of the recent processes of sterilization these substances must be removed The remainder consists chiefly of collagen, which under the continued action of hot water is transformed into gelatin Dr Larrabee quotes the experiments of Saul, who found that if catgut was boiled in a 5 per cent solution of carbolic acid in absolute alcohol, three hours were not enough to kill anthrax bacilli dried upon it The addition of a small quantity of water gave much better results, since by using a 90 per cent solution, instead of absolute alcohol, the bacilli were killed in ten minutes Hofmeister has, however, found gut, after such boiling, contained staphylococci, which developed in proper culture media As a result of Dr Larrabee's investigations, he found that boiling the gut after Saul's method for fifteen minutes was sufficient to sterilize the smaller sizes, but, in forty experiments from the larger sizes, boiled from fifteen to thirty minutes, he obtained six cultures He therefore concludes that it is necessary, in order to be absolutely sure of sterility, to boil the smaller sizes thirty minutes, the medium forty-five minutes, the largest sizes are safer boiled one hour "Catgut thus prepared deteriorates by age, and whether preserved wet or dry, a certain per cent of the actual strength is certainly lost"

Dr R M Pearce reports[6] a series of careful studies of sterilization of catgut with formaldehyde This he applied by vaporizing small amounts of the 40 per cent solution (formalin) into a glass chamber in which the catgut was exposed In every experiment sterilization was satisfactory, but the gut became so brittle that it was ruined He shows that the injury occurred largely from the moisture necessarily contained in the vaporized formalin He found that the gas in a dry condition gave a much better result and this he recommends as a practical method of sterilization "Nothing is required but a wide-mouthed jar, some paraform pastilles, a piece of wire gauze or open-meshed cloth and a wide-mouthed bottle A dozen pastilles are put in the bottom of the jar and covered with a piece of wire gauze to prevent actual contact with the gut The pastilles yield a sufficient amount of gas for complete sterilization"

Dr A Goldspohn[7] of Chicago has contributed an interesting article upon the preparation of catgut by formalin and boiling From a careful review of the experimental studies of a number of reliable investigators and a series of his own he deduces the follow-

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[3] Journal of the American Medical Association Dec. 12, 1896

[4] Boston Medical and Surgical Journal Jan 28 1897

[5] Archiv f klin Chirurg 50 323 1895

[6] Boston Medical and Surgical Journal April 19, 1898

Reprint Chicago Medical Recorder Vol xiii ing "These facts being known we must not depend on formalin to sterilize catgut but simply to harden it so that it may be boiled *ad maximum* That this maximum boiling of twenty minutes may be possible it is necessary to remove all excess of formalin from the gut by prolonged washing in running water previously But the vexatious question is now settled that catgut can be certainly sterilized, for we can now boil it in water, the ideal menstruum, as long as the adherents of silk need or usually care to boil that, and the advantages of absorbable ligatures are too obvious to require further comment However, there is one slight objection to catgut remaining, which arises from the ptomains which it may sometimes contain On this subject Dr Edmondo Orlandi in Turin published researches in 1895, and Professor Papfert of Giessen likewise toward the close of 1896 Both affirm the occurrence of slight or non-virulent suppuration limited to the immediate vicinity of the gut, not producing any systemic disturbance, and usually subsiding without any marked detriment locally However, to avoid this objection partly, I am now having all catgut soaked in ether previously for forty eight hours or more to extract the fat, hoping also to get rid of some of the ptomains that may be present"

"My reasons for preferring catgut so prepared are, first and chiefly, because it stands the crucial culture tests that have been applied to it by its founders, which is not true of any former method, that of von Bergman not excepted, for Braatz cultivated anthrax spores of only moderate resistance in abundance from catgut prepared by that method Secondly, because of the immense satisfaction to a surgeon derived from a knowledge of the supreme germicidal capacity of water boiling for twenty minutes Thirdly, because this catgut is hardened enough to answer the purposes of chromicized catgut reasonably well without being too hard From clinical observations my impression is that the smaller sizes hold from seven to ten days, while the larger sizes, as No 6, used on pedicles, etc, hold for about fourteen days"

Formalin acts upon connective tissue in a way to change its ultimate cells and cement substance into a homogeneous mass of gelatinous character Deformalized in running water for twenty-four hours and boiled loosely coiled in water, the gut or tendon swells immensely and shortens to about one third its former length It is fibular, elastic, a homogeneous translucent mass If wound tightly on a small test tube and boiled shrinkage does not take place, but the other changes ensue and the tensile strength is much lessened If catgut thus heated remains in the tissues only as long as Dr Goldspohn has determined, its durability is much too little to be trustworthy for many operative purposes

In the present status of the question, the views of those who have, for a time at least, discarded the use of catgut as an unreliable suture material must be held to be justifiable

In the New York *Medical Journal*, Feb 18, 1897, is an interesting article upon slowly absorbable antiseptic catgut, prepared by a modification of Boeckmann's method, by C W Borden, M D, U S Army He believes that the chief merit of the method is in rendering the suture material much more slowly absorbable by boiling it for an hour and a half in a 1/500 solution of mercuric bichlorid in alcohol This antiseptic catgut has given, in his experience, most excellent results He does not think the small amount of bichlorid of importance in producing irritation or wound secretion, and that it is readily disposed of in the tissues without injury He believes there is as little danger of bichlorid irritation as of iodoform poisoning from using the formalized catgut soaked in an alcoholic solution of iodoform, recommended by Senn

Dr Borden thinks that it is of manifest advantage to add his method of making an antiseptic suture to that of Boeckmann, which consists in sterilization by dry heat He considers that the formalin method of Hofmeister produces a catgut not in any way equal to that which he recommends He thinks kangaroo tendon has been greatly overrated and attempts to show by an experimental study of a wound that it is far less resistant to the tissues than has been usually considered, and singularly believes it conclusive by giving a photograph of a frayed end of a kangaroo tendon suture emerging from the skin, "where it had been completely eaten through by leucocytes" Such examination teaches only the extraordinary rapidity with which the active proliferating processes supervene in the superficial layer of the skin, and this phenomenon has often been remarked upon in contradistinction to the processes which take place when the suture is buried in the tissues The same process is observed uniformly, when the sutures are deeply taken through the mucous surfaces, as for example, the continuous over-and-over suture taken through the cervix of the uterus Dr Borden has taken the trouble to reproduce by micro-photographs the difference which followed the implantation of "unbichlorided kangaroo tendon and bichlorided catgut" in a septic wound, and shows that the tendon is less irritant than the catgut to disintegration changes This should follow, if the bichlorid is of any value in preventing decomposition He reports no attempt to show results where the catgut and kangaroo tendon, both of good quality and sterilized by the same method, have been aseptically buried in the same animal Here, as I long since demonstrated, the contrast is most marked, and the results show that the tendon remains comparatively unchanged for a much longer period

In the coaptation of the skin the subcuticular suture should be completely buried The first end is fastened by a half knot, after the skin is penetrated The stitch is taken parallel to the long axis of the wound, each succeeding stitch entering exactly opposite to the emergence of the previous one, and secured where the needle finally emerges through the skin by a half knot as at the beginning This holds the edges in even, close coaptation The ends of the suture are cut even with the skin, and slight tension in the long axis of the wound causes the ends to disappear below the surface (buried) It is then sealed with iodoform contractile collodion without drainage The skin suture should be a fine one, and it is important to implant it only in the *deeper* layer of the skin, subcuticular, otherwise the skin may proliferate before absorption ensues and superficial abscesses follow

Sterilization of tendon—A small portion of the dried tendon is soaked for a considerable period in a warm solution of bichlorid of mercury (1–1000) When well softened [illegible] on [illegible] easily [illegible] Each individual t[illegible] sublimated towel [illegible] they are [illegible] with comparativ[illegible] cultivate bacteria where culture tests have been made of tendons thus prepared By reason of its histologic structure, as before explained, the tendon, when buried in the tissues, is much more slowly penetrated by the proliferative leucocytes than catgut The effect of chromic acid upon the intercellular cement substance is extraordinary It fixes it by a process of tanning and does not in any way interfere with its pliability, increases somewhat its tensile strength, causes it to absorb moisture more slowly and renders it much more resistant to the disintegrating influences, when buried in vitalized structures

The tanning of certain grades of leather has been much improved by a somewhat similar use of chromic acid The process is not only much shortened and cheapened, but the resultant product is very much more valuable Recently, a large manufacturer showed me a goat skin thus tanned It was not fine leather, but he said it would make a durable shoe, whereas under the old processes of tanning it would hardly be worth manufacturing These methods are protected by patents and have already earned the owners over two millions of dollars Chromic acid may be applied to the suture material in a strength which renders it unfit for use and makes it almost as slowly absorbable as silkworm gut When properly chromicized, the suture should be of a light golden color and slightly translucent It may be well preserved for an indefinite period in the dry state, but, as Lord Lister long ago pointed out, preserved in light-colored boiled linseed oil, to which 5 per cent of carbolic acid has been added, it seems to keep indefinitely and for a certain period, I think, is improved by age When only partially immersed, as in a bottle half full of oil, the tendon becomes sticky and is greatly damaged If replaced, after being removed, in a wet state, in the carbolized oil, the water in the tendon forms a sort of emulsion which speedily ruins it It may be preserved in many of the different ways which have been recommended for catgut, and so far as I am aware I have tried them all By none, however, has the product remained permanently as reliable as by the method just given Kangaroo tendon prepared as above is objected to because of the trouble in preparation and its cost, trouble in that the oily product is difficult to seal after having been bottled, and the oil must be removed from the tendon before using However, the latter is easily effected by immersing the sutures, just previous to use, in a warm sublimate solution for half an hour I consider the antiseptic quality resulting from the remaining bichlorid beneficial rather than otherwise

Is such tendon trustworthy and assuredly aseptic? Infective wounds, from a variety of causes, will follow in a small percentage of cases in the practice of every surgeon, but it is his imperative duty to exercise every possible care to prevent it The sterilization by heat is considered absolute, hence instruments, towels, gauze, etc, may be assumed non-infective The certainty of such knowledge, so far as suture material goes, is of equal importance, and hence the oft-repeated injunction, "trust no sutures that you have not personally prepared" By culture tests I have assured myself that the tendon is sterile and each of the various processes in its preparation is always conducted under my personal supervision The query most often made is "What shall I do with the unused tendon that has been soaked in the bichlorid solution?' Wrapped in a sterilized towel, it should be sun-dried, and when thoroughly dry, replaced it in the carbolic oil for future use Repeated treatment in this way leaves the tendon undamaged For the last two years I have soaked the tendon for a considerable period in a solution of formalin, prior to its chromicization This is a still further guarantee of disinfection

Boiling in alcohol has been a favorite method with many surgeons for the disinfection of catgut Sterilization of tendon may be effected by this method, but it renders it brittle, hard, and is much less satisfactory in its application Dry heat is less damaging than by any other, except the above-mentioned chemical processes, and leaves a product more satisfactory than when boiled in alcohol It is also perfectly easy of application by the simplest of all methods There are two requisites, however, which are essential, the tendon must be entirely freed of the *oil* and *moisture* A simple means of drying is to retain it for some hours in the sunshine, or in a warm oven A coil of the dry tendon is placed in a large test-tube, with a dry cotton plug, over the end of the tube a rubber cap is securely tied This is put in the sterilizer as long as it may be deemed desirable and thereby is known to be trustworthy If only a very slight degree of moisture remains in the tendon, the resultant will be a compact mass of ruined material

Tendon will bear repeated heating in this way with comparatively little damage, and it may be recommended as a safe means of assurance to the surgeon that any possible subsequent infection of the wound is not caused by his suture material Kangaroo tendon sutures should be obtained at a cost of ten dollars per hundred, and so great has been the demand for it that I have had it prepared in quantity, under my personal supervision, for general use, which I fully believe is absolutely trustworthy and reliable These sutures are coming into general use I am constantly in receipt of letters reporting the great satisfaction following their employment, I have already quoted Dr Coley Dr F W Longyear of Detroit says "My experience has been entirely with this material, and has extended over a period of more than four and one-half years, during which time I have used it for both ligature and suture in fifty-seven cases of celiotomy, with and without drainage, and I have yet to see my first case of post-operative hernia where this material was employed"

Kangaroo tendon ligatures, ten or twelve inches in length, should cost less, since in the preparation of sutures which are long, fine, smooth and even, the larger part of the gross material is rejected

It is quite difficult to obtain really fine sutures, and much placed upon the market is not of first quality I have written the above description in careful detail, since there can be no question but that the use of the buried animal suture marks the greatest advance in the development of aseptic surgery When applied in closing the abdominal wound by suturing the different layers independently, the skin also closed by a subcuticular continuous suture and the wound sealed with iodoform collodion, hernia is practically avoided, In over eight hundred aseptic laparotomies thus closed I have had but once subsequent hernia, and that in an extremely thin abdominal wall after the removal of a large uterine myoma The cure of hernia by any of the so-called modern methods is dependent absolutely upon the use of buried sutures in closing the neck of the sac, reinforcing the weakened structures and the reconstruction of the obliquity of the inguinal canal, and it was for this very purpose I first employed animal sutures in 1870 With all the emphasis of an earnest conviction, I commend to every aseptic surgeon familiarization with the methods of wound closure by means of buried absorbable sutures, preferably tendon, and not alone predict their general adoption, but believe that in importance they hold the first place in the technic of modern aseptic wound treatment

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THE THERAPEUTICS AND SURGERY OF THE CEREBRO-SPINAL AXIS

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CHICAGO ILL

It is safe to assert that the cerebro-spinal axis is the master-wheel for man's animal machinery If the mainspring of a watch becomes interrupted in its integrity, the gearing throughout the entire structure becomes disturbed, its functions as a chronometer cease, and it stops If the drivewheel of a locomotive engine be impaired, the functional activity of the great iron drudge is interfered with, and the creature must rest and be repaired before activity in function can be regained If the centerpiece of the complicated machinery of a large manufactory becomes deficient or inoperative, the whole concern must shut down for repairs at any cost In consequence of the dangers besetting mainsprings, drivewheels and centerpieces, extra protective measures are adopted for their continuous functional activity and uninterrupted security In most cases an alternate or duplicate is provided that functionation may be assured

The careful student of this piece of workmanship will have observed early in his work that the law of protection and compensation has been strictly obeyed by encasing the central nervous system in the cranial and spinal cavities in two symmetric halves, the one incasement in bony pieces, endurably immovable, the other in irregular blocks endowed with enduring possibilities, all lined with tough and resisting fibrous membrane of remarkable endurance, closely adherent to the inner surface of the bones and outer walls of cavities, and for the most part furnishing protective sheaths to the outgoing nerve trunks—adherence most marked where dangers are most threatened at the sutures within the skull, but secure throughout the entire extent of both cavities This is familiarly known to anatomists as the dura mater, from its enduring qualities Immediately surrounding the medullary mass and intimately investing it, is a delicate membrane composed of vascular netting, threads of which, large and small, penetrate the mass and form plexuses on the walls of the cavity within This webbing of blood-vessels becomes plainly the nutrient mother of the system, and is hence called pia mater Between the two maters hangs another membrane, delicate in its fibrous structure and somewhat adherent to both Its suspensory, lubricating and protective functions are plainly in evidence This is the arachnoid membrane, and it serves in a triple capacity

Epitomized, the membranous structures of the axis may properly be stated to be the dura mater, for protection, the arachnoid, for suspension and the accommodation of movement, and the pia mater, for the accomplishment of the essential act of life — its nutrition

Between the maters is the arachnoidian space and membrane with communication throughout the entire extent of the axis Another fact may be stated without argument The cerebro spinal axis is a hollow organ itself from end to end, and the vascular netting passes through and forms an anastomosis on the walls of the lumen Schiff, Quincke, Leightheim, Fuerbringer and others have clearly demonstrated that lumbar puncture can be practiced with more or less impunity, and that, as a diagnostic measure, the operation is of great value, enabling the diagnostician to locate with accuracy the approximate position of certain pathologic processes in meningeal affections The admitted impunity with which the procedure may be accomplished lends assurance of safety in establishing permanent fistulæ in the lumbar, dorsal, cervical, or even in the cranial regions, as is done in the various abdominal localities for establishment of artificial anus, so efficient in many surgical measures for the relief of disorders of the intestines Because of the dangers from infection by perverted natural discharges from the intestines, the abdomen would be the more critical field to invade

No more vitalizing agent has been created than oxygen, and no more active and unerring antiseptic agency has been, or ever will be, devised than ozone, which is electrically condensed oxygen In all diseases of the central nervous system the first indication is to remove the inevitable pressure, whether from the effusion of blood or of serum or from bony environment, either from deformity or depressed bony spiculæ of traumatism, infection or vitiated nutrition

The next move in the process of therapeutic procedure is to correct by every means at command this disturbed nutrition, which is constantly in evidence in all morbid processes Direct medication is the modern advance in therapeutic procedures as illustrated in antisepsis Through a permanent fistulous opening at any point throughout the extent of the cerebro-spinal axis may be injected safely and with facility, a stream of oxygen or ozone into the interior of the mass, and therefore brought to bear directly on the plexuses, and thence into as intimate relation with the floating column of corpuscles as in the air cells of the lungs, and doubtless with the same vitalizing effect, or the gaseous current may be directed into the arachnoidian space and thus be brought to bear in the same way and with equal efficiency on the vascular structure of the pia mater

With a tissue as highly endowed with facilities for a constant supply of nutritive fluid as in the central nervous system, and charged with the all-important functions in evidence in it, a theory consigning it to be hopeless destruction and irretrievable ruin on every occasion when circumstances of traumatism or infection present is phenomenally absurd Any part of the cerebro-spinal axis whose special function may be suspended for a sufficient length of time to afford rest and opportunity for a correction of interrupted nutrition may be safely invaded by the surgeon's knife, and repair as confidently expected as from mutilations in any other part of the body, with liberal margins in favor of the nerve mass and the bones ent[illegible] into its encasements

At the beginning [illegible] th a whose chief hist[illegible] shaking from our [illegible] conservatisms of the past to become aggressively civilizing, if not, indeed, cosmopolitan or imperial, with all that these new national movements involve, I appeal to the science of surgery and the brilliant array of American operators on behalf of the human brain, the central nervous system, or the cerebro spinal axis I make this appeal the more earnestly, knowing as I do, that thousands of the flower and promise of our manhood must fall before the foes upon whom we must move in the sacred cause of humanity

Modern warfare inflicts ten wounds about the head and face to one below the waist The field for operative procedure and therapeutic study for the military surgeon is above the waist in large degree, and in this the head and face prevail over all others, and the reasons for this are plain, when we consider the manner of offense and defense The military surgeon of today has opportunity long and wide for making himself an important factor in the march of the world in behalf of civilization and in the interests of humanity

AN INQUIRY INTO THE NORMAL ANGLE OF JUNCTION OF THE NECK, WITH THE SHAFT OF THE FEMUR

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association held at Denver Colo , June 7-10 1898

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In the examination of this subject, an effort has been made to confine the inquiry to specimens of the male bone fully developed, free from the results of injury or disease, and ranging in age as nearly as could be determined from twenty-five to forty years

These extremes of age are selected arbitrarily, for between these periods of life the bone may be said to be at the height of its development—it has neither the deficiencies of incomplete growth or the defects of degeneration incident to age, it may be presumed therefore to be typical in all of its detail As is well known, two angles are formed by the neck of the femur with the shaft of the bone, the upper being an acute angle, while the lower is an obtuse angle and gentle curve from the lower portions of the neck to the internal border of the shaft with which it becomes continuous The arrangement of the bony fiber of the neck and the position of the neck itself upon the shaft is undoubtedly for minimizing the strain of the bodily weight above, in its transmission to the upper extremity of the bone below These facts are now generally well recognized It will also not have escaped the notice of the observer that the trochanter minor acts as an additional and powerful support to the neck of the femur upon its posterior and internal aspects, assisting greatly in transmitting the bodily weight Again the perpendicular diameter of the base of the neck is greatly increased, as compared with the transverse measurements of the bone at the same place, also for the natural purpose, quite evidently of compensating for the change in direction of the strain of the bodily weight by increased strength and quantity of bony structure, the change in direction being from a perpendicular line to an angular line passing from the cup shaped cotyloid cavity to the globe shaped hemispherical upper extremity of the femur

These circumstances, different in minor degree in different individuals, alter the angle of junction at the neck with the shaft somewhat, but in a way that makes it quite evident that there is a maximum and minimum degree of angularity between which extremes the angle of junction presented by any given specimen of the bone may be said to be normal

In order to arrive at conclusions worthy of credence some definite method of anatomic measurement dependent upon fixed anatomic relations should be devised When these relations varied in any given specimen of the bone which I examined, it was noticed that the angle of junction also varied in a like proportional degree, but always within the extremes of angularity above alluded to as probably being normal In selecting specimens of the bone from which measurements were made for the purposes of this paper, those bones were chosen which presented on the anterior surface a large venous foramen—usually much larger than its neighbors—which was placed immediately below the spiral line and in a position which seemed to be the anatomic center of the shaft Through this opening a perpendicular line was projected, which was also parallel to the axis of the shaft as nearly as could be determined. The position of the foramen in the specimens selected seemed also to be placed about one sixth of an inch below the anatomic center of the neck of the bone, for the reason that a line projected through the center of the neck and representing its axis—as nearly as could be determined—intersected the line of the axis of the shaft at one sixth of an inch above the foramen, thus establishing perhaps the true angles by which a bone should be measured The two angles established are an upper acute and a lower obtuse angle After establishing these angles and marking them upon the several bones examined by use of ink, they were carefully examined and measured with an angleometer, an instrument of precision for exact measurements of this character In some twenty-five or thirty specimens examined—a number not sufficient to establish fixed rules, however —the minimum acute angle measured was 38 degrees, while the maximum acute angle was 52 degrees the average angle being 47 degrees and 30 minutes, there being a few minutes less or additional as the case might be in many of the bones examined When the place of the foramen varied from the position of one-sixth of an inch below the spiral line, but still maintained what seemed to be the anatomic centers of the neck and shaft with reference to that line, it was noticed that the acuity of the angle became less, thus if the foramen was placed at one-fifth or one-fourth of an inch below the line, the acuity of the lesser angle approached the minimum angle of 38 degrees, which has been named as the minimum angle noticed in this series of specimens It is, of course, unnecessary to remark that the greater or obtuse angle is to be found by subtracting the measurements of the acute angle from the measurement of the axis of the shaft of the femur, which was assumed to be 180 degrees

As is indicated by the title of this brief paper, its purpose is to record merely the results of an inquiry The method adopted to attain these results is offered to the Section upon its merit for what it is worth

McPhee Building, Denver, Colo

THE TREATMENT OF INOPERABLE SARCOMA WITH THE MIXED TOXINS OF ERYSIPELAS AND BACILLUS PRODIGIOSUS

IMMEDIATE AND FINAL RESULTS IN ONE HUNDRED AND FORTY CASES

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association, held at Denver, Colo , June 7-10 1898

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Three years ago, at a meeting of this body in Baltimore, a paper was read upon a similar subject by a distinguished surgeon In that paper, based upon a personal experience of nine cases, three of which were carcinoma and a large proportion of the remainder types of sarcoma, which I had myself regarded as unfavorable, the broad generalization was made that the method was of no value, and the prophecy was ventured that in one year from that date it would be forgotten and buried in that oblivion that has furnished a quiet resting-place for so many of the brilliant cancer cures that have from time to time dotted the medical history of the past

In the discussion of the paper I was rash enough to dissent from these conclusions, and in spite of the warnings and criticisms of the skeptics, I have steadily persevered along the same lines, and am here today to present the results of my work, leaving you to be the judges whether or not my labors have been in vain

I have felt that the question was one that depended for its solution, not upon high authority or *a priori* arguments, but rather upon facts, derived from careful observation and large clinical experience At that time I had treated eighty-four cases of inoperable malignant tumors with the mixed toxins, and no one could possibly have witnessed as I had, a considerable number of cases of hopelessly far advanced inoperable sarcoma, the diagnosis of which had been confirmed by the most skilled pathologists, entirely disappear under the injections of the mixed toxins, without being convinced that there was *something* of value in these toxins It seemed to me that these successful cases, some of which at that time had remained well nearly three years, more than offset the many failures I myself as well as others had had Moreover, it seemed reasonable to suppose that further investigation would enable us to improve the method as well as to ascertain just what types of tumor were most influenced by the toxins Time will permit but a hasty review of the earlier cases already reported (*Am Journal of Medical Sciences*, September, 1896) yet some review is of the utmost importance, since it is only by a study of the older cases that we are able to determine the permanence of the cure With this end in view I have tabulated all of my cases of sarcoma, giving the final results as far as ascertainable

I have decided in the present paper to confine my remarks almost entirely to sarcoma, and I have so decided for two reasons The first and chief reason is to correct, if possible, the misunderstanding that I have found so common among men who have read the subject but casually, viz that the toxins are advised indiscriminately in all cases of inoperable cancer, whether sarcoma or carcinoma Some excuse for this mistake may possibly be found in the titles of my former papers, yet a careful reading of the papers themselves, and especially the conclusions, will show that I have advised the toxins practically only in sarcoma and have stated that their use in carcinoma was, up to the time in question, largely experimental I did state that I believed good results, similar to those obtained in sarcoma, would in time be obtained in carcinoma While that time has not yet come, I can claim, I think, some reason for my belief in a few cases of carcinomatous nature attended with marked results However, until this number has considerably increased, I think it wise to restrict the toxins to sarcoma, and it is needless to say, to inoperable sarcoma I have never advised the treatment in cases of sarcomas amenable to operation, unless it be in a few cases where a brief period of treatment was advised with the idea of avoiding amputation of a limb If the tumor be in the soft parts, and especially if spindle-celled, I believe it justifiable and even strongly to be advised to try to save the limb I have now a patient who has been well nearly two and one-half years with rapidly recurrent spindle-celled sarcoma of the right hand, in which amputation of the arm would have been done had not the growth disappeared under the injections I do not consider her cured, and shall not until she has gone beyond three years Dr L L McArthur of St Luke's Hospital, Chicago, has had a case of recurrent spindle-celled sarcoma of the leg and a three times recurrent sarcoma of forearm, which disappeared under the toxins and made amputation unnecessary Dr John E Owens of Chicago has also had a similar result in a case of round-celled myeloid sarcoma of tibia All of these cases are well three years after treatment, and in three the diagnosis was confirmed by microscopic examination I do not believe the chances of a cure by amputation are jeopardized by the short time necessary to determine the success or failure of the toxins In cases of rapidly growing, small, round-celled sarcoma of the bone I would not advise the toxins, but immediate amputation I have used the toxins in a few cases after primary operation as a prophylactic measure to lessen the chances of recurrence Theoretically, this use of the toxins has much to recommend it, but my cases are as yet too few in number to warrant me in making any positive statements as to its value

Method of preparing the toxins and technic of administration —The preparation I have used the past three years is the same as described in my last paper, viz the mixed, unfiltered toxins of the streptococcus of erysipelas and the bacillus prodigiosus, made from cultures grown together in the same bouillon and sterilized by heating to 58 degrees C , in children and patients much reduced in strength I have used the filtered toxins prepared by passing the mixed living cultures through a porcelain filter This preparation is much weaker than the unfiltered, the relative strength of the two being about 1 10 or 15 The effect of the filtered solution upon the tumor is less marked than that produced by the unfiltered. The toxins used during the last five years have been prepared by Dr B H Buxton of the Loomis Laboratory, New York In the earlier cases the toxins were made from cultures of streptococcus of erysipelas obtained from a fatal case, but during the last three years a sufficientl[illegible] ee of [illegible] has been obtained by [illegible] the [illegible] gh rabbits S[illegible] th [illegible] through [illegible] with by Drs W H Park and Alexander Lambert of the Board of Health Laboratory, and it was found that 1 c c of a bouillon culture reduced to one millionth part of its strength by dilution, was capable of killing a rabbit within twenty-four hours This increase in virulence has been, I am convinced, a direct factor in the success of the toxins, and in fact, it was to increase the virulence of the erysipelas cultures that, in 1892, I first combined the bacillus prodigiosus with the streptococcus of erysipelas, Roger of Paris having proved that the latter germ had the power of making the streptococcus more virulent in rabbits, though as far as I know, it had never been used in the human body, nor had the combination ever been suggested in connection with the treatment of malignant tumors I have never claimed to be the first to suggest the idea of substituting the toxins of erysipelas for the living cultures Lassar of Berlin was, I think, the first to do this, in 1891, and Spronck of Utrecht, in October, 1892 (*Annals de l'Institute Pasteur*), reported twenty-six cases of carcinoma and sarcoma treated with a preparation of toxins of erysipelas prepared in the same way as Koch's tuberculin, but neither observer obtained a single complete success Previous to Spronck's paper I had experimented with bouillon cultures of erysipelas heated to 100 degrees C, having been led to this by the marked improvement I had observed to follow repeated injections of living cultures, even when no erysipelas was produced Dec 12, 1892, I presented to the Surgical Section of the Academy of Medicine the results of repeated injections of living bouillon cultures of the streptococcus of erysipelas in ten cases of inoperable malignant tumors, and in this paper I stated that "In view of these results (my own), as well as those of Spronck, it may be considered definitely proven that a portion, if not all, of the benign influence of the toxins of erysipelas, rests in the toxic products rather than in the germ itself The fact that thus far the results from an attack of erysipelas have been by far more brilliant and permanent, proves that either the germ itself or its continued action plays an important rôle, or, what is quite as probable, we have not yet learned how best to isolate the toxic principles and to use them in the most efficacious doses"

However much difference of opinion there may be as to the part the bacillus prodigiosus plays in causing the disappearance of sarcoma, and I am conscious that some claim it has no value at all, the fact remains that all of my own successes, as well as those of other surgeons, have been obtained with the combined toxins, and as far as I know, no one has recorded a successful case treated with the erysipelas toxins alone

I have experimented in a large number of cases with the erysipelas toxins, at first alone, and later in combination with the bacillus prodigiosus, and I am quite convinced that the process of degeneration of tumor tissue is greatly increased by the prodigiosus toxin Many opinions have been expressed as to the nature of this process, by means of which a cure is effected in the successful cases The opinion which has been most generally advanced, though usually resting on theoretical, rather than practical knowledge, is that it is a simple necrosis or sloughing process resembling that following the injection of any powerful escharotic like carbolic acid, consequently it has been regarded as an entirely local process Nothing could be farther from the truth While in some cases of soft, round-celled sarcoma the rapid breaking down of the tumor would lend support to this view, there are many cases that absolutely disapprove its correctness A number of cases of sarcoma have disappeared entirely by absorption with no breaking down, and furthermore, in several the injections were made remote from the tumor This proves the action to be systemic as well as local The toxins in some way, probably acting through the blood serum, cause a coagulation necrosis with fatty degeneration of tumor cells, the breaking down and formation of a slough depending entirely upon the preponderance of the cellular elements over the intercellular or fibrous stroma In the spindle-celled variety, absorption without breaking down is the more common, while in the round-celled type, the reverse is true Usually, when possible, I prefer to give the injections locally, for I have found the effect more rapid and more marked than when given subcutaneously and remote from the tumor A much larger quantity can be safely given subcutaneously than when injected into the tumor, and this is a point of great practical importance I have seen a severe chill and a temperature of 105½ follow the injection of one minim of the mixed unfiltered into a vascular sarcoma, when ten minims subcutaneously would have caused less reaction In other words, the severity of the reaction depends largely upon the rapidity of absorption

Dosage—The rule should be to begin with a minimum dose and slowly increase each day until the desired reaction has been obtained If this rule is carefully observed I believe the element of danger to be exceedingly small It is evident that the dose depends largely upon the virulence of the cultures, and since it is extremely difficult to keep cultures of the same virulence the dose must vary within certain limits, and must be determined in the individual case by trial, the thermometer furnishing the guide During the past two years the strength has been very uniform Toxins produced from very virulent cultures, such as I am now using, mixed, unfiltered, should never be given in larger initial doses than one-half minim or 0 32 c c Boiled water may be added to each dose to obtain the proper dilution Each day the dose should be increased by one half minim until the reaction temperature reaches 102 degrees or 103 degrees The toxins may be used undiluted in doses of one minim or more, as this quantity can be carefully estimated with a well-constructed hypodermic syringe If the injections are given subcutaneously, remote from the tumor, larger doses are borne, and in that case one minim can be given as the initial dose, and increased one minim daily The amount required to produce a chill and temperature of 102 degrees or 103 degrees, varies with the individual case, one to two minims injected into the tumor will generally be sufficient If the reaction is severe, the chill usually occurs within fifteen to twenty minutes of the injection If the temperature following chill reaches 104 or 105 degrees, which is higher than one should aim to obtain, some stimulation with whisky and strychnin may be indicated Nausea and vomiting usually occur in the severe reactions, but they are of short duration, and after one or two hours the temperature begins to fall and should reach normal within twelve hours Following small doses, headache, slight muscular pains, especially in back, and a feeling of general malaise are the only symptoms observed, and these soon pass It is unnecessary to produce a chill after every injection, in fact, some of my successful cases had no more than four to five chills during the whole course of treatment The aim should be not to cause too much depression, for in that case the patient is unable, for some time, to stand even small doses Many of the successful cases steadily gained weight during the treatment, which disproves the statement of some writers that the treatment is exceedingly depressing and causes rapid emaciation This may be true if the doses are too large but not when the method is judiciously carried out Strychnin may cause speedy death or act as an excellent tonic, according to the dose administered

Aseptic precautions —Inasmuch as the administration of these as well as other toxins undoubtedly increases the liability to infection if pathogenic germs are present, too great caution can not be exercised in sterilizing the hypodermic needle and the skin If a tumor be ulcerated or broken down, great efforts should be made to keep the parts aseptic Lack of such precautions has certainly been the cause of death in a number of the fatal cases

Duration of treatment —Fortunately it is possible in most cases to tell in a comparatively short time whether or not the toxins are likely to be effective If no beneficial results are apparent after three weeks' treatment, I believe it useless to continue the injections In nearly all of my successful cases marked improvement was seen within a week after the first injection, though final cure required, in some cases, several months of treatment In one case, one of inoperable spindle-celled sarcoma of the abdominal wall, the tumor entirely disappeared under thirty injections and the patient is now well, one and one-half years later The question of danger of long continued injections of the toxins is an important one One patient with thrice recurrent rapidly growing carcinoma of breast and axilla had the toxins steadily for two and one-half years The doses were moderate, seldom producing a chill, and averaged two a week The tumor has disappeared The patient gained ten pounds in weight and her general health was perfect The tumor finally recurred, ran a rapid course, causing death in six months

Another case, an eight-times recurrent spindle-celled sarcoma of the chest wall (soft parts), has had the toxins with occasional intervals of rest for nearly four years The disease has been kept almost completely in check by small doses of the filtered toxins and the treatment has not interfered with the duties of the patient, who is a well-known physician

Macroscopic changes in the tumor —The changes in the tumor that are first detected are marked decrease in vascularity, loss of the smooth, glossy appearance of the overlying skin and later the presence of small wrinkles in the skin, the tumor soon becomes much more mobile and loosely attached Marked decrease in size is often noticed within three or four days after treatment Cessation of pain is in many cases caused by the treatment and anodynes which, though indispensable, before are no longer needed

REVIEW OF IMPORTANT CASES ALREADY REPORTED, WITH SUBSEQUENT HISTORY

Case 1 —Recurrent inoperable spindle celled sarcoma of neck and tonsil, treated with injections of living cultures of erysipelas for four months Well six years Although this case was treated with repeated injections of living bouillon cultures of erysipelas and not the toxins the result was so remarkable that I may be pardoned for referring to it The tumors nearly disappeared and the patient recovered his general health, well May 1897, six years later

Case 2 —Recurrent sarcoma of back and groin, mixed celled, round, oval and spindle Male, aged 40 First treated on April, 1892, with repeated injections of living bouillon cultures of erysipelas Entire disappearance, rapid recurrence two months later, final disappearance under the mixed toxins Four more attacks of erysipelas artificially produced, and with less effect, in January 1893 The patient remained well three and one fourth years, and in September, 1896, had an intra-abdominal recurrence in the retroperitoneal region The tumor increased rapidly in size In November, 1896, the patient became markedly jaundiced, but at the end of six weeks the jaundice disappeared and did not return He gradually failed and died in April, 1897 Autopsy showed a large, hard tumor starting behind the posterior parietal peritoneum, pressing the viscera forward against the abdominal wall The pathologic report of the original tumor made by Dr Farquhar Ferguson of the New York Hospital was given in full in my last paper It was a mixed celled sarcoma, round, oval and spindle celled

Case 3 —Inoperable spindle celled sarcoma of the abdominal wall and pelvis Entire disappearance of the tumor under four months' treatment with the mixed filtered toxins, well at present, five years later Patient male, aged 16, years, admitted to the New York Cancer Hospital in January, 1893, having been referred to me by Dr L Bolton Bangs as a totally inoperable sarcoma, the diagnosis having been confirmed by microscopic examination by Dr H T Brooks, pathologist at the Post-Graduate Hospital The entire tumor, 7 x 5 inches, completely disappeared and at my last examination made, May, 1898, the boy was in perfect health, free from recurrence, upward of five years

Case 4 —Inoperable sarcoma of the abdominal wall Entire disappearance under two and one half months' treatment with the mixed toxins (filtered and unfiltered) Patient is perfectly healthy at present, three and one half years after treatment. The patient, a woman, aged 28 years, had had an exploratory laparotomy performed in August, 1893, at the Massachusetts General Hospital, by Dr Maurice H Richardson A tumor was found involving such a large portion of the abdominal wall that removal was impossible, a portion was excised and pronounced spindle celled sarcoma by the hospital pathologist, Dr W F Whitney She was referred to me in October, 1893, by Dr Richardson June 1, 1898, she was in perfect health with no sign of induration at the site of the tumor

Case 5 —Spindle celled sarcoma of the leg and popliteal region, three times recurrent, disappearance under the toxins, recurrence in the gluteal region after one and one half years Female aged 16 years Further treatment with the toxins caused decrease in the size of the tumor until it was possible to remove it by operation One year later signs of returning growth appeared in the popliteal space as well as in the stump of the leg Amputation at the middle of the thigh was performed Since the amputation the patient has been given injections from time to time with the filtered toxins with the idea of preventing a further recurrence She is at present in good health, June 1, 1898

Case 6 —Spindle celled sarcoma of the scapula involving large part of left half of the thoracic wall Entire disappearance of the tumor under three months treatment with the mixed unfiltered toxins, patient in perfect health, without recurrence, Jan 22, 1898, four years later As this is one of the most striking cases of success with the toxins, a brief abstract of the history will be given The patient, a girl aged 16 years, was admitted to the New York Cancer Hospital June 20, 1894. The tumor had started in the left scapular region, four months before, and had grown very rapidly until the time of admission, the tumor measured 13 inches vertically behind and extended around beneath the axilla and to the sternum in front The growth was fixed to the scapula and to the ribs, and probably originated in the soft parts over the scapula, it was about two inches in thickness in its most protuberant part, the skin over it being normal and perfectly movable The left arm was bound down by the new growth so that it could scarcely be raised to a horizontal position The mixed, unfiltered toxins were injected locally into the scapular portion of the tumor and continued with intervals of one to two days for nearly four months Immediate and very striking improvement followed, at the end of three weeks the arm could be raised to a vertical position After three months' treatment the tumor had entirely disappeared by absorption only, without breaking down There was no evidence of inflammatory, tuberculous or specific disease The diagnosis of spindle cell sarcoma was [illegible] microscopic e[illegible]ination by Dr [illegible] Grad Hospital [illegible] June

1898, and no evidence of return was found General health perfect

Case 7 —Intra abdominal round celled sarcoma, involving the omentum, colon and loop of small intestine and border of the liver Exploratory laparotomy, diagnosis of round celled sarcoma confirmed by microscopic examination by Dr F Schwyzer, pathologist to the German Hospital This patient, a woman, aged 23 years, was operated upon by Dr Willy Meyer at the German Hospital, August 16, 1894 Dr Meyer stated that to remove the growth radically seemed impossible He closed the abdominal wound and referred the patient to me for treatment with the mixed toxins Treatment was begun in September, 1894, the injections were made sometimes into the abdomen, sometimes into the buttock. The treatment was kept up with occasional intervals until Feb 7, 1895 The tumor mass which was distinctly felt at the time the treatment was begun, slowly decreased in size and June 25, 1896, no tumor could be felt. A sinus had persisted since Dr Meyer's operation till March 4, 1896 Incision was made and the sinus traced into the gall bladder, and several calculi, one half inch in diameter, tightly wedged in the cystic duct, were found, these were removed The sinus still persists, but the condition of the patient when last seen, more than three years later, was that of perfect health

Case 8 —Inoperable recurrent angiosarcoma of the breast, treated with erysipelas and prodigious serum, later by the mixed toxins The patient, female, aged 59 years, had a three times recurrent sarcoma of the left breast, of such size that operation was entirely out of question She was admitted to the New York Cancer Hospital Jan 20, 1895, and placed in the incurable ward Physical examination showed a tumor occupying the region of the left breast extending from the anterior axillary line to the sternum, and from just below the clavicle nearly to the free border of the ribs, it was more or less fixed to the chest wall, and markedly protuberant. The patient's general condition was so bad that no attempt was made at first to give her the toxins, she was treated with small doses of erysipelas and prodigiosus serum, prepared by Dr Buxton The tumor slowly shrank in size and the patient's general condition improved, by September, 1895, the tumor had become so much reduced in size and was so loosely attached that it was easily excised under ether Examination Jan 30, 1896, showed the patient to be in good general condition with no evidence of recurrence The diagnosis was confirmed by microscopic examination by Prof T M Prudden of Columbia University, who pronounced it angiosarcoma round celled

Case 9 —Twice recurrent spindle celled sarcoma of the palm of the hand, entire disappearance under two months' treatment The patient, 20 years of age, had injured her right hand two years before In July, 1895, a small swelling appeared in the palm of the right hand, in October, 1895, it had reached the size of a hickory nut and was removed Speedy recurrence followed A second operation was performed by Dr Edward Martin of Philadelphia, on Jan 2, 1896 Microscopic examination showed the tumor to be a spindle celled sarcoma On Feb 15 1896, the patient was sent to me by Dr Martin for trial with the toxins before resorting to amputation of the arm, the tumor had already recurred at that time at the site of the old cicatrix, 2½ inches long and 1½ inches wide, the mass was attached to the skin and firmly adherent to the tendons, but apparently did not involve the bony structures The injections with the mixed toxins were begun on Feb 15, 1896, the filtered preparation was used at first, later the unfiltered solution The injections were made partly in the tumor itself, but the major portion were given subcutaneously in the arm The treatment was given almost daily until March 30, when it was continued at her home by her brother, who is a physician On May 15, 1896, the tumor had entirely disappeared and she was able to extend her fingers perfectly, 120 degrees having been the maximum extent to which she could straighten her fingers at the time the treatment was begun She was presented to the New York Surgical Society for examination on May 27, 1896 The treatment with the filtered toxins has been kept up, with occasional intervals, to the present time, although in small doses, not sufficient to produce a chill Not more than four chills were produced during the entire course of treatment. In October, 1896, there was a suspicion of glandular enlargement high up in the apex of the axilla The patient was given ether, and a gland about the size of an olive was removed from the upper portion of the axilla near the clavicle This gland was examined microscopically and was found to be distinctly sarcomatous, although it showed very marked degeneration It may have been present when the treatment was begun, as it was very difficult to find it even at the time when removed The patient at the present time, June 1, 1898, remains in perfect health A slight thickening was noticed in palm February, 1898 This has yielded to further use of the toxins administered chiefly in the arm

Case 10 —Recurrent spindle celled sarcoma of the thigh and groin, entire disappearance under the toxins M S, female, aged 48 years Family history negative Five years ago the patient slipped and strained the muscles of the left thigh, three years ago a lump appeared at the outer aspect of the left thigh about the junction of the middle and lower thirds This grew slowly March 7, 1896, operation at the New York Hospital by Dr Wm T Bull A tumor the size of a fist was removed, but the large mass in the inguinal region was not interfered with, inasmuch as it was impossible to remove the entire tumor in the thigh There was much edema in the whole leg and thigh

Pathologist's Report Copy of the records of the New York Hospital Pathological Laboratory "The material is a piece of skin and subcutaneous tissue and masses of voluntary muscular tissue The skin is circular in outline and measures 10 cm in diameter, there are two tumors alongside of each other, the one measures 5 cm in diameter, the other 4½ x 3 cm. In the deeper relations the lines of incision have gone very close if not through the tumor tissue The larger tumor is soft and brittle and vascular, the smaller one is firm in consistence and whitish in color Microscopically the structure of the tumor is that of spindle celled sarcoma, the smaller tumor contains much more fibrous tissue "

The injections with the mixed, unfiltered toxins were begun at the New York Hospital, May 30, 1896, by Dr Le Fetra, the house surgeon under my direction, and continued until June 15, every other day Temperature reaction ranged between 101 and 103 degrees There was a considerable diminution in the swelling, pain was less and the patient was able to walk upon the leg, which she could not do before Examination June 16, 1896, shows a recent cicatrix, five inches long at the lower, outer aspect of the left thigh The middle of the cicatrix, about one and one half inch in width, had not entirely healed In the region of cicatrix and to the outer side was an indurated mass, apparently the remains of the new growth Measurement of the left leg four inches above the patella, was twenty one inches Right leg at the same point, sixteen inches. There was an ill defined tumor in the left inguinal region, nothing could be felt in the pelvis The swelling of the leg and thigh was much less than at the time of the injections were begun The patient was admitted to the New York Cancer Hospital, and the injections were continued with occasional intervals of rest until September At this time the tumor in the thigh and groin had entirely disappeared and the left leg had become normal in size

Examination in January, 1897, showed no recurrence, measurement of the left leg the same as that of the right In April, 1897, the left leg had begun to swell again and a small tumor was detected in the groin, induration of the old cicatrix also seemed slightly greater The patient was again admitted to the New York Cancer Hospital, and the treatment resumed At the end of three weeks the swelling of the leg has decreased considerably and the tumor in the groin has disappeared The old cicatrix was removed and examined microscopically but no evidence of recurrence was found

Case 11 —Spindle celled sarcoma of iliac fossa, probably starting in the ilium Mrs D, aged 40 years, with a good family history in the early part of 1895 began to have sharp, stinging pains in the right iliac region In May, 1895, she discovered a tumor in this region This steadily increased in size, and on October 19, 1895, Dr Johnston of Boston, performed an exploratory laparotomy A tumor was found in the right iliac fossa about the size of a cocoa nut, attached to the ilium as well as to the abdominal wall and totally inoperable Its exact point of origin could not be made out, but from the exploration and subsequent examination I am convinced that it started from the inner portion of the crest of the ilium A part of the tumor was excised and examined by Dr William F Whitney, pathologist to the Massachusetts General Hospital, who pronounced it "spindle celled sarcoma " In November, 1895, the patient was treated with injections of the mixed unfiltered toxins (Buxton) by Dr Farrar Cobb of Boston In a letter Dr Cobb states "At the end of six weeks' treatment the growth has entirely disappeared "

On May 17, 1896, the patient came to me with a recurrence and entered the New York Cancer Hospital Examination at that date showed a hard mass on the right side, extending from the crest of the ilium nearly to the level of the umbilicus and as far to the left as the median line The tumor was apparently located in the ilium and abdominal wall Her general health was excellent The toxins were at once begun and continued with intervals of rest for three months The outline of the tumor gradually receded toward the crest of the ilium, and when she was discharged from the hospital the tumor was not more than one fifth its original size when I commenced the treatment. She left with the understanding that she was to return in the fall and resume the injections She was readmitted to the Hospital in November

Examination showed the tumor to have increased considerably in size during the interval of rest, but on beginning the treatment the tumor at once began to shrink Whenever the injections were made the patient noticed a peculiar burning feeling in the tumor, and this was true whether the injections were made into the abdominal wall or into the thigh The abdominal wall was so thick with fat that few of the injections were made into the tumor itself This patient was one of the very few I have seen in whom the toxins always produced very severe irritation in the skin After each puncture a hard, indurated and very painful area the size of a half dollar would appear, and this would not pass away entirely for several days When she left the hospital June, 1897, the tumor had re markedly decreased in size When last heard from, December, 1897, she was still in good health

Case 12 —Inoperable sarcoma of the sacrum, entire disappearance, perfect health three years later —The patient, male, aged 38 years, enjoyed good health until February, 1895, when he began to lose flesh and strength He suffered severe pain in the lower part of the spine over the region of the sacrum, shooting down to the legs, more marked upon the right On April 1, 1895, he consulted Dr W C Deming of Westchester At that time he was beginning to be lame in the right leg, soon after the lameness extended to the left leg as well These symptoms progressively increased pain was acute On May 2 he was sent by Dr Deming to St Luke's Hospital His normal weight of 175 pounds had decreased to 134 pounds He was so lame that it took him one hour to walk a distance of half a mile He was admitted to Dr Francis P Kinnicutt's service, who on careful examination of the rectum found a tumor attached to the anterior portion of the sacrum the lower border of which could be reached with the index finger, but not the upper The tumor was of firm consistence and apparently started in the sacrum The patient was emaciated and cachectic, his general appearance was strongly suggestive of malignant disease The diagnosis of Dr Kinnicutt and the other physicians and surgeons who saw him in consultation was Inoperable sarcoma

On May 10, the very day I returned from the meeting of this Association at Baltimore I found a letter asking me to see the case in consultation with Dr Kinnicutt with reference to the toxin treatment My diagnosis agreed with that of Dr Kinnicutt, but owing to the weakened condition of the patient and the inaccessibility of the tumor, making it necessary to give the injections remote from the tumor I gave a bad prognosis, although I deemed it advisable to give the patient the benefit of a trial with the toxins for two or three weeks, advising, if no improvement occurred in that time, to discontinue the injections The injections with the mixed, unfiltered toxins were begun at once, and made into the gluteal region, the treatment was repeated daily and at the end of one week the pain had almost entirely subsided and the lameness had markedly improved The treatment was carried out at St Luke's Hospital for six weeks and at the end of this time the improvement was so great that the patient returned to his home in Westchester and resumed his work The injections were continued by Dr Deming two or three times a week in the evening, after the patient had returned from his work By the end of June, seven weeks after the treatment had been begun, the patient had gained twenty eight pounds in weight, and stated that he felt as well as ever Examination in the early part of July showed a decided decrease in the size of the tumor, and his lameness had entirely disappeared On March 8, 1896, I again examined the patient and found him in perfect physical health and weighing 175 pounds On rectal examination I was unable to detect any trace of the tumor remaining October, 1897, I again examined this patient and found him absolutely well without a trace of recurrence Present weight, 175 pounds He has had no treatment since the fall of 1895

The report of this case I owe to the courtesy of Drs Kinnicutt and Deming, who had personal charge, although the treatment was begun by myself and carried out under my direction

Case 13 —Inoperable sarcoma of the iliac fossa E S, male, aged 14, family history negative History of injury One and one half years ago was dragged under a trolley car which caused some contusions about pelvis In January, 1895, the patient began to feel a pain in the right groin In February, 1897, he noticed pain in the right hip joint and groin which was at first thought to be rheumatism. He rapidly lost flesh and strength and the hip joint became less and less movable, and early in March, 1897, the attending physician, Dr G H Davis of Brooklyn, detected a tumor in the right iliac fossa, apparently starting from the ilium The pain was exceedingly severe and constant. The tumor steadily increased in size and on March 27, 1897, he was taken to the Brooklyn Hospital and on March 29, exploratory laparotomy was performed by Dr Geo R Fowler A vascular tumor was found filling up the right iliac fossa, extending upwards about three inches above the crest of the ilium and Poupart's ligament A diagnosis of sarcoma was made, and as it was clearly inoperable, the wound was closed and the parents were told that the case was entirely hopeless The use of the erysipelas toxins was suggested as a last resort, but in view of the large size of the tumor and the weakened condition of the patient, little encouragement was given The mixed, unfiltered toxins were begun in small doses on April 10, 1897 The injections were repeated daily with slowly increased doses, six minims were given before any decided reaction occurred The injections were given in the gluteal region and not into the tumor I first saw the patient in consultation with Dr Davis on April 25, 1897 He had shown slight improvement since the injections were begun, but his condition at the time I saw him was so desperate that I gave a very bad prognosis Physical examination at this time showed the patient extremely emaciated, with marked cachexia His weight could not have been more than sixty pounds, his normal weight having been ninety pounds The thigh was flexed on the abdomen to an angle of 120 degrees and motion was nearly absent, a hard tumor was felt in the right iliac fossa, extending upwards for about three inches above the crest of the ilium The pulse was 130 and weak

In spite of his apparently hopeless condition, I thought it wise for a short period to push the treatment to a point of obtaining marked reactions, and the dose was gradually increased up to 12 minims At several times there was a well marked chill with a temperature of 102-103 degrees following the injections The improvement was immediate and rapid I saw the patient again at the end of three weeks and to my astonishment found him walking about, able to straighten his leg and thigh completely He had gained apparently no less than ten pounds and had a ravenous appetite Examination of the abdomen showed that the tumor had almost entirely disappeared and now extended not more than a finger's breadth above Poupart's ligament It is true that no microscopic examination was made by Dr Fowler in this case, but the clinical history is so clear and striking that the diagnosis of sarcoma is scarcely open to reasonable doubt The injections were *not* made into the tumor but into buttock and upper thigh A few months later he developed a fluctuating swelling over the ilium behind The skin became broken and slight infection occurred, causing some temperature I incised the swelling, evacuating several ounces of degenerated tissue No bare bone could be detected The boy gained after the opening was made, but later the drainage became unsatisfactory and under ether I made a very free incision five inches long through the entire gluteal region down to the great trochanter, the original opening high up had not drained well and the discharge had produced an abscess cavity of some size lower down. The curettings and walls of cavity were most carefully examined by Dr Buxton and not the slightest evidence of tuberculous disease could be found, practically verifying the diagnosis of sarcoma The last operation was done April 10, 1898, and a few days ago (June 1, 1898) the patient's physician wrote me he had gained ten pounds and was feeling very well The tumor in the iliac fossa has never recurred and the only probable explanation of the trouble in the gluteal region is, I think, that the softened and degenerated sarcomatous tissue worked backward along the line of least resistance and finally became infected The primary tumor undoubtedly started in the ilium This case has not yet been reported

Case 14 —Recurrent round-celled sarcoma of the lip treated with the mixed toxins —A little girl, aged 5 years, daughter of a physician Family history good Personal history First noticed a small spot, resembling a mosquito bite, on the right side of the lower lip, in September, 1896 About four weeks later it was removed by Dr James R. Yocom of Tacoma, Wash It was not regarded as malignant at that time, but the specimen was kept in alcohol In October the growth began to reappear Examination was then made of the specimen previously removed, and it was found to be round celled sarcoma A much more extensive operation was immediately done, the entire thickness of the lip being removed, going widely beyond the scar and tumor The tumor at that time was about the size of a pea and markedly indurated A few weeks later it again occurred in the region of the scar Feeling that further operation would be of little avail, the child was brought to me for treatment with the toxins The tumor at that time involved the entire scar and extended from the mucous membrane of the lip downward about one and one half inches, and was increasing rapidly in size The mixed toxins were begun Feb 10, 1897, and injected into the tissues of the lip near the tumor and repeated in doses just sufficient to give her a slight reaction, but only once producing a chill The filtered toxin was given except in two instances The tumor tissue very soon lost its vascularity, began to shrink and to lose the glossy tense appearance After four weeks' treatment, there was apparently very little of the tumor tissue remaining, but with a view of decreasing the chances of relapse, by removing any possible sarcomatous tissue that might be present, I decided to excise the entire scar tissue resulting from the previous operation This was done by making the usual incision adopted in epithelioma of the lip, cutting about one fourth inch beyond the scar tissue The tissue removed was carefully examined microscopically by Dr B H Buxton, assistant pathologist to the New York Cancer Hospital, and no sarcomatous elements could be found in any portion of the tissues removed The child is still free from recurrence, August 1, 1898 The injections of the filtered toxins into the arm have been used with intervals of rest during the past year

Case 15 —Spindle celled sarcoma of the abdominal wall Entire disappearance following thirty injections of the toxins Patient well at present, one and one half years afterward M S, female, aged 18 years, was admitted to the New York Cancer Hospital Dec 29, 1896, with a tumor in the lower portion of the abdomen of several months' duration Exploratory laparotomy was performed by Dr Joseph Brettauer, assisted by Dr George W Jarmon, the attending gynecologist A large mass was found in the abdominal wall, both intra and extra peritoneal, but it had no connection with any of the abdominal organs It was regarded as inoperable and a portion was removed for examination and pronounced by the hospital pathologists, Drs E K Dunham and B H Buxton, as a spindle celled sarcoma The case was transferred to my service in order to have the toxin treatment tried The first injection was made Jan 19, 1897 The toxins used were prepared by Dr Buxton from cultures of streptococcus that had been passed through fifty five rabbits, thus attaining a very high degree of virulence After thirty injections, the largest dose being six minims of the filtered toxins, the tumor had entirely disappeared Very little pain and discomfort resulted from the treatment, and but four chills occurred the entire time This case was shown in April, 1897, before the New York Surgical Society The patient was reported perfectly well May 10, 1898

Case 16 —Spindle celled sarcoma of the parotid, twice recurrent, inoperable, successfully treated with the toxins —W L, aged 40 years, male, carpenter by occupation Maternal aunt died of malignant tumor of the breast, which had developed as a result of an injury In September, 1896, the patient received a slight injury to the left parotid region, the swelling was first noticed early in 1897 It continued to increase in size and in March, 1897, was removed by Dr J W Wright of Bridgeport, Conn A second and a third operation were performed in April, but the growth was found too extensive to admit of removal Before the first operation the sub maxillary glands on the same side had become involved In July, 1897, the patient was treated for three weeks at the Bridgeport Hospital with the mixed toxins of erysipelas and bacillus prodigiosus, with but little improvement. Physical examination showed the tumor to be four inches in diameter, occupying the entire left parotid region, extending from the angle of the jaw to the orbit, from the external auditory meatus nearly to the angle of the mouth. The tumor was hard, firmly fixed to the deeper structures, with an ulcerated area at the center two inches in diameter, there was a second tumor the size of an English walnut in the sub maxillary region August 10, the patient was sent to me by Dr Wright for further advice Previous microscopic examination had proved the growth to be spindle celled sarcoma, and this fact led me to advise further treatment. The patient was treated from August 10 to October 15, at the Post-Graduate Hospital, and being in very good physical condition, much larger doses than usual were administered and the injections were made daily most of the time Although a chill generally followed the injections the patient was up and about the ward the entire time and lost no weight. A marked improvement was noted at the end of two weeks' treatment This improvement continued constantly until the middle of October, when there was no evidence of the disease remaining either in the face or neck The patient was shown before the New York Surgical Society March 22, 1898, in perfect health, with no trace of the tumor remaining He is still well, July 1, 1898 Two other successful cases (Dr Johnson's and Dr Storr's) of inoperable spindle celled sarcoma, now well, one two and a half and the other four years, treated under my direction, will be found under cases of other surgeons

Case 17 —Inoperable epithelioma of the chin, lower jaw and floor of mouth The mixed toxins were used for four months Entire disappearance The patient well without recurrence four years afterward This case has already been fully reported in a former paper The patient was referred to me by Dr Geo R Fowler of Brooklyn, who regarded it as entirely inoperable Microscopic examination was made by Dr William Belcher, pathologist of the Seney Hospital of Brooklyn It is but fair to say that the microscopic examination was made from frozen sections and I wish to give due weight to whatever doubt there may be attached to the diagnosis The fact remains that the operation proposed for the condition, by an eminent surgeon, was entire removal of the lower jaw, floor of mouth and portion of the tongue In view of the dangers attached to this operation and the chances of a speedy recurrence, the surgeon advised against it. The tumor entirely disappeared under four months' treatment with the toxins and the patient continues well four years afterward

Case 18 —Inoperable carcinoma of the breast Three times recurrent Constant treatment with the mixed toxins for two and one fourth years Disappearance of the tumor Patient in good health until the end of this period when a local and general recurrence ensued. This case, although referred to in an earlier paper, has not yet been fully reported The following is a brief history of it Mrs B, aged 40 years, first noticed a tumor in the right breast four years ago, developing shortly after an injury caused by a fall First operation performed by Dr Grupee of New York, in January, 1894 It consisted in a partial excision of the breast, the axilla not being opened In the latter part of 1894 there was a well marked recurrence, both in the breast and axilla I operated upon the patient the second time at the New York Cancer Hospital in June, 1895 The conditions found being worse than I had expected, it was impossible to make a thorough removal of the diseased tissue The glands were distinctly carcinomatous as far as the clavicle, the largest, the size of a large hickory nut, located high up in the axilla, completely surrounded the axillary vein and was so firmly adherent that it could not be removed without resecting the vein, which was not thought advisable Hence only a palliative operation, consisting of the removal of the free glands and the remainder of the breast, was performed Local recurrence took place in the center of the cicatrix before the wound had entirely healed and the disease progressed rapidly The arm soon became swollen and the pectoral muscles showed marked infiltration I decided to try the effects of the mixed toxins, expecting little more than a temporary retardation Small doses seemed to have but little effect upon the tumor, but by larger doses the disease was controlled and even showed signs of retrogression, the swelling of the arm likewise improved A few months later I gave the patient ether and excised the area of local recurrence in the neighborhood of the cicatrix, measuring two by three inches This was firmly adherent to the periosteum of the ribs so that only a partial removal was possible The disease quickly reappeared, but by increasing the doses of the toxins and the frequency of the injections, it was soon controlled and cicatrization of the carcinomatous ulcer slowly began to take place, and complete healing had occurred by January, 1896 The tumor in the axilla also decreased so much in size that it could no longer be felt. The infiltrated pectoral muscles became softer and practically normal to the touch. The right arm which, before the injections were begun, measured two inches more than the left, now showed a difference of but one half inch The patient had gained ten pounds in weight. The injections were continued in very small doses, one to three minims producing little or no reaction and in no way disturbing the patient in performing her ordinary duties The patient continued well until the summer, 1897, when there was noticed a slight local recurrence in the pectoral region and shortly afterward an enlargement of the supra clavicular glands The toxins were left off for a period of five weeks, during which time the growth was most rapid A few weeks later enlargement of the liver, jaundice, ascites and all the signs were noted As early as July, 1897, slight twitchings of the left arm and face were noted, these gradually became more frequent and ended in partial paralysis All the symptoms increased with great rapidity and the patient died in the early part of December, 1897 Microscopic examination of the tumor showed it to be a typical carcinoma

The case is of much importance, since it shows that in certain cases at least the toxins do have a marked inhibitory action even upon carcinoma

Case 19 —Recurrent double carcinoma of breast. This case is one of interest, as it shows that in certain conditions the toxins may be used to advantage in carcinoma, especially in conjunction with partial operation

Mrs W , aged 56 years, with decided family history of cancer, first noticed retraction of the left nipple three years ago One year later she noticed a similar condition of the right breast The first operation, double amputation of the breast, was performed by Dr Maurice H Richardson of Boston on Oct 8, 1895 Recurrence was first noticed in June, 1896, in the form of small, pea like infiltrations in the skin These increased in size until they formed a mass, three by four inches in diameter Dr Richardson advised against further operation and asked my opinion as to the use of the toxins I stated that I believed the treatment would prove of only temporary value, and might have no effect If the carcinomatous area could be removed surgically, I thought the toxins might have some influence in delaying a recurrence, although I did not believe they would prevent it altogether With a clear understanding of these conditions, Dr Richardson operated a second time on Nov 27, 1896, and removed the area mentioned On January 1, before the wound had entirely healed, new nodules appeared in the outlying skin near the anterior axillary line The toxins, filtrate, were begun Jan 10, 1897, and continued in small doses daily for one month. The small recurrence in the skin disappeared The general condition of the patient, which was had at the beginning, remained about the same, but allowing a short interval of rest, her appetite improved and she felt much better than before the injections were given The latter were resumed, this time by Dr Richardson, and given three times a week, the dose being only 10 minims of the filtrate, which produced no chill, but only headache and slight malaise The treatment has been continued in small doses with frequent intervals of rest up to the present time, June 1, 1898, or one and a half years There have been four or five small sharply localized skin infiltrations—the largest less than one fourth of an inch in diameter These have been removed under cocaine, and the patient is still well and in better health than at any time during the past year and a half

(To be continued)

A SURGICAL TREATMENT FOR HYPERTROPHIED PROSTATE AND HERNIA IN OLD MEN, WITH A REPORT OF TWENTY-EIGHT CASES

Presented before the Section of Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association held at Denver Colo June 7 10 1898.

BY GEORGE W JOHNSON, B Sc , M D ,
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No class of patients is more worthy of the sympathy and careful attention of the physician than the unhappy victims of prostatic hypertrophy To this malady is often added hernia, enterocele, with adhesions of the intestines, hernial sac and tunicæ, and not infrequently there is chronic hydrocele of the cord and multilocular cystic degeneration of the testicle Already declining from the general organic dissolution of senility, these complications make them a class of patients difficult and unsatisfactory to treat The constant appeals from this class of sufferers for relief from vesical pain and burning, rectal and vesical tenesmus, frequent and painful urination, retention of urine and its concomitant misery, has demanded of me more than passing notice

The diseases of the prostate and bladder and their adnexa have been studied by many scientific men, and their researches have done much to mitigate the suffering of this class of patients That there are still conditions which find no relief from palliative means of treatment, there is no doubt The failure on the part of medicine in this direction has of late attracted the attention of the surgeon, and his efforts have not been without success

It is the purpose of this paper to report some experimental work in the surgical treatment of enlarged prostate, as well as the radical cure for hernia in old men I wish to impress upon your minds the fact that this radical means of treatment for these conditions was resorted to only after years of suffering and pauperism, and when all other sources of relief had repeatedly failed I do not propose to discuss diseases of the prostate and bladder in general, and much of the clinical detail leading to a diagnosis calling for surgical treatment, is purposely omitted The minutæ of examination and the detail technique of operations will be abbreviated as much as possible An unusually large number of this class of patients have come under my observation the last two years, and I have made a careful study of each case, to try to determine the value of radical treatment, and the class of patients requiring it

Frequency, Common Varieties and Results of Enlarged Prostate—Sir Henry Thompson has observed that one third of all men over fifty-five years of age have some enlargement of the prostate gland, and that a large per cent of this number suffer from urinary disturbance as a consequence, that the onset is between the age of fifty-five and sixty years, and that it rarely comes on before this age, but may appear later I am of the opinion that the onset, in many instances, is earlier than this, but does not manifest itself clinically until about this period, depending much upon the exciting cause

The lateral lobes of the prostate may be greatly enlarged without evil consequences, but should they be so enlarged as to produce mechanical obstruction to the prostatic urethra, or the prostatic urethra itself be enlarged, however small, or as McGill has observed, a band of prostatic tissue be formed about the vesico-urethral portion, difficulty in urinating will result These conditions, sooner or later, produce distortion of the prostatic urethra, elevation of the vesico-urethral orifice, and obstruction to the return of blood to the bladder Later on, as a consequence of these changes, there will be dilatation of the bladder, fibroid degeneration of the prostatic sphincter, hypertrophy of the vesical walls, dilatation of the urethra, and renal pelvis, calculus formation and uremia In some instances there may be prostatic enlargement without evil effects But a slight pressure upon the prostatic urethra, or a slightly hypertrophied condition of this organ, may produce endless mischief, and yet be entirely overlooked by the physician

Examination—A digital examination per rectum should be made in every case where there is suspicion of prostatic disease, and a somewhat thorough knowledge of the diseases of the prostate and bladder is required Strictures and vesical calculi must be constantly in mind Palliative treatment should be faithfully tried, for many cases of supposed grave prostatic trouble yield readily to this form of treatment

Symptoms—In acute prostatitis there is frequent and painful urination, the pain and sometimes a few drops of blood coming at the close of the act Distress in the perineum, radiating along the urethra and into the spermatic cords and sometimes down the thighs, rectal and vesical tenesmus and painful defecation If there is a prostatic abscess forming there will be obstruction to the flow of urine, and, in extreme cases, retention, grave constitutional symptoms and throbbing pain in the perineum and bladder Cystitis will be [illegible] and [illegible]gital tion per rectum pain [illegible] the and prostate will be

Chronic Prostatitis —The symptoms are practically the same in this condition save in degree There is usually a history of nocturnal pollutions, impairment of sexual function, pyuria and vague neuralgic pains in the pelvis

Prostatic Hypertrophy —In this condition there will be a history of difficulty in emptying the bladder, tardiness in the onset of the flow of urine, and lack of force A sense of feeling that the bladder has not been emptied after urinating, fullness in the perineum and rectum, especially during and after stool, retention and enuresis, pain and prostration, cystitis and vesical and rectal tenesmus usually make up the clinical history Stricture and vesical calculi call for a special examination These symptoms are taken from the clinical history of the cases I shall report, and were commonly met with before a positive diagnosis was made The patients making up the report have been inmates of the Cook County Infirmary for years, by reason of these infirmities, and represent but a fractional part of those still untreated among the fifteen hundred patients under my charge I simply selected those suffering most, making a careful examination clinically, physically, and of the urine They were then confined to bed, and a thorough line of palliative treatment, suitable to each, carried on for from two to three weeks, and sometimes much longer I shall report them in classified groups, giving a detailed description of the first case of each group This case will be illustrative of the group The others are here reported but not read The groups will be arranged according to the kind of hernia and the operations done The treatment for all forms of enlarged prostate is the same, consisting of either gonangeiectomy or orchidectomy

GROUP I

Group 1 represents cases in which there was bilateral hernia with orchiocele on one side, in which orchidectomy was done upon that side and herniotomy and gonangeiectomy upon the other side Two cases

Case 1 —Aged 65, bed ridden, emaciated, gastritis, constipation Large direct inguinal hernia on right side, with an enormous orchiocele of thirty six years' duration On left side was also a hernia, which occupied the scrotum, but was not so large or of so long duration as the one on the right side Prostate gland was greatly enlarged, had had trouble in urinating for fifteen years, was confined to bed on account of retention of urine, suffered from pain in bladder and rectum, had cystitis and a large amount of residual urine, catheter required and passed with difficulty, was filthy from enuresis, peevish and irritable

Treatment —Medicinal treatment consisted of hot vesical douches twice daily of boric acid, nitrate of silver, 1-3000, or bichlorid of mercury 1-10,000 Laxatives medicated suppositories for pain in rectum Hot sitz baths, hot fomentations to the perineum and bladder, counter irritation to the perineum, diluents for the urine, and "milking" of the prostate This treatment was continued for three weeks, with negative results

Surgical —Chloroform anesthesia, incision on right side after Bassini's method, cord, testicle and hernial sac removed from scrotum in mass, cord separated and ligated high up testicle removed, sac dissected out high up and ligated and stump dropped back into peritoneal cavity The upper and inner portion of Poupart's ligament and the under and outer surfaces of the conjoined tendon and margin of the internal oblique were freshened with a sharp curette and formaldin catgut sutures, No 3, introduced so as to draw the conjoined tendon and internal oblique above the conjoined tendon over Poupart's ligament, entirely closing the external ring and obliterating the canal The external wound was closed with silkworm gut sutures and a wet bichlorid of mercury dressing of 1-2000 applied Herniotomy, after Bassini, with resection of the vas deferens was done on the left side

Subsequent history —Recovery from operation uneventful Wounds dressed and superficial sutures removed on the sixth day Union by primary intention No relief from prostatic trouble for three weeks, when gradual improvement began and continued until complete recovery six months after operation, patient having perfect control of urine, with a gain of fifty pounds in weight

Case 2 —Aged 72 years Had been an invalid in Cook County Infirmary for years, with bilateral hernia and prostatic enlargement On right side was a very large hernia, occupying the scrotum Same condition on left side, except in degree Prostate greatly enlarged, with a long history of urinary disturbance, and catheter life Prolonged treatment gave negative result

Chloroform anesthesia —Orchidectomy on right side and herniotomy and gonangeiectomy on left side Recovery uneventful Sutures removed on fifth day Primary intention and relief from former distress in bladder after four weeks

GROUP II

Cases with bilateral hernia, with either bilateral chronic hydrocele of the cord, or bilateral cystic degeneration of the testicle, with bilateral orchidectomy Three cases

Case 1 —Aged 62 On right side was a hernia of fifty nine years' duration, which was both congenital and acquired, On left side was a large scrotal hernia, of ten years duration Prostatic urethra was plainly palpable and hard Had enuresis and inability to empty bladder, excepting with catheter, for years Had violent cystitis Medical treatment negative

Chloroform anesthesia —Hernia on right side was found to be both congenital and acquired The congenital sac—forming the tunica vaginalis was firmly adhered to the scrotum There was hydrocele of the cord, and cystic degeneration of the testicle Testicle was removed, true sac dissected out, and made into a tampon Deep and superficial sutures, as usual There being also chronic hydrocele of the cord and cystic degeneration of the testicle on left side, this testicle was also removed and the ordinary sutures and dressing applied Wounds dressed and superficial sutures removed on the sixth day Recovery entirely uneventful save for a slight attack of melancholia of one week's duration No urinary symptoms after the fourteenth day Has taken on flesh rapidly since operation, and is in good general health.

Case 2 —Aged 75 Had been an invalid in Cook County Infirmary since 1892. Had bilateral inguinal hernia with a very large orchiocele on right side Had suffered for years from prostatic trouble Had residual urine, and had to use catheter frequently Medicinal treatment absolutely negative

Chloroform anesthesia —Owing to the thin abdominal wall on right side, and the very large opening, orchidectomy was done on this side Left testicle was found to be cystic and was also removed Sutures removed on the fourth day, and the patient began to get vesical relief in two weeks Catheter was not passed after operation Has had no mental symptoms Is now entirely free from former prostatic trouble, and is a comfortable old man

Case 3 —Aged 71 Right oblique inguinal hernia, and chronic bilateral hydrocele of the cord of twenty years' duration There was bilateral cystic degeneration of the testicles On right side covering of cord and hernial sac were firmly adherent. Prostate was very much enlarged, and the patient had suffered for years from urinary trouble Had been an inmate of the Cook County Infirmary at various times for years, and required frequent use of catheter No relief could be had from medicinal treatment The hydrocele had been tapped a great many times Palliative treatment negative

Chloroform anesthesia —Both testicles removed Union by primary intention Convalescence entirely uneventful No mental disturbance After one month is free from former prostatic trouble, and in splendid general health.

GROUP III

Cases with hernia and large enterocele and cystic testicle on one side, with castration on that side and gonangeiectomy on the other Twelve cases

Case 1 —Aged 82 Right inguinal hernia of fifteen years' duration Hernia has been strangulated three times Was filthy from enuresis Prostate enormously enlarged and hard to the touch Has had retention, at times requiring catheter Chronic cystitis Medical treatment negative

Chloroform anesthesia —Right testicle removed, and left was resected Became confused mentally a few days after the operation, with delusion of wealth and power Was exalted, sang and exhorted at night Urinalysis showed albumin, for which he was vigorously treated, resulting in almost instant relief from mental trouble He began to improve at once, and made a splendid recovery Three weeks after the operation he was taken by his daughter, at which time he was almost entirely free from his prostatic trouble

Case 2 —Aged 64 Right complete inguinal hernia of thirty nine years' duration Right testicle was cystic Hernial sac was divided into three pockets leading from a diverticulum Sac was greatly adherent to tunicæ and scrotum Prostate was enlarged and had trouble from his urine, from which he could get no relief Catheter required to remove residual urine

Chloroform anesthesia.—Right testicle was removed and gonangeiectomy done of left side Primary union Sutures removed on fifth day Nine weeks after operation has no urinary trouble whatever Is entirely well

Case 3 —Aged 68 Strangulated left inguinal hernia Was a suffer from prostatic hypertrophy, and during the operation for strangulated hernia, bilateral gonangeiectomy was done Fifteen days after operation patient was up, and since then has been very well, and working hard for a farmer near the Institution He thinks his bladder trouble was due to the "rupture "

Case 4 —Aged 75 Right oblique inguinal hernia of but one and one half years' duration Right testicle very much enlarged and cystic Gives a history of urinary disturbance for years Enlarged prostate Has to use catheter at times Medicinal treatment negative

Chloroform anesthesia —Right testicle removed, and left was resected Made an uneventful recovery, and is entirely free from prostatic trouble, three months after operation

Case 5 —Aged 61 Enormous right side inguinal hernia occupying the scrotum, and of thirty five years' duration Prostate enlarged, with urinary disturbance of a number of years Residual urine drawn by catheter Medical treatment gave negative result.

Chloroform anesthesia —On incision the hernia was found to be both congenital and acquired The true hernial sac was dissected away from that which enclosed the testicle and cord An incision was made into the congenital sac and the cord was ligated and cut off The upper portion of this sac was ligated and dropped back into the peritoneal cavity, while the lower portion and testicle were removed The true hernial sac was returned above the ring as a tampon The left vas was resected and in this case braided silk was used for the deep sutures The external wounds healed by primary intention, but after two weeks a fistulous opening formed and the silk sutures had to be removed This delayed convalescence Six months after the operation there is no recurrence and patient is entirely well and free from prostatic trouble

Case 6 —Aged 75 Had a large inguinal hernia on right side which extended into the scrotum Was of a great many years' duration Could not remember how long Was suffering from retention and enuresis Required frequent use of catheter to draw off residual urine Medical treatment negative

Chloroform anesthesia On incision the hernia was found to be congenital An incision was made into the congenital sac and cord ligated and cut away Testicle removed Acquired sac returned as tampon Left vas resected Recovery uneventful Prostatic disturbance gradually disappeared, and is now in splendid general health five months after operation

Case 7 —Aged 76 Right inguinal hernia of twenty six years' duration Prostatic urethra plainly palpable and very hard Was suffering great agony from retention Had had enuresis and general urinary wretchedness for years Cystitis, catheter required Medical treatment absolutely negative

Chloroform anesthesia Right testicle being cystic was removed Left vas was resected Recovery entirely uneventful and complete in one month

Case 8 —Aged 61 Very large scrotal hernia of fourteen years' duration Could not be reduced, owing to adhesion to scrotum, and of the intestines to the hernial sac Was a good tailor, but was unable to work on account of pain from hernia and bladder trouble Faithful palliative treatment negative

Chloroform anesthesia Incision down upon the sac Adhesion between sac and scrotum broken up Incision into the sac, and the intestines carefully separated, though leaving many raw surfaces Intestines returned to peritoneal cavity and sac tied off Cord ligated and testicle removed The opening through the abdominal wall being so large three rows of sutures were put in, beginning with peritoneum, Poupart's ligament, internal oblique and conjoined tendon Fascia of external oblique to margin of Poupart's ligament Left vas was resected. The bowels were kept active with salines and the patient made a beautiful and uneventful recovery Three weeks after operation was perfectly free from any of his former trouble and has resumed his work

Case 9 —Aged 55 Incomplete right inguinal hernia, seven years' duration Has had urinary disturbance for ten years Large amount of residual urine, requiring use of catheter

Chloroform anesthesia Orchidectomy on right and gonangeiectomy on left side Temperature normal after sixth day Sutures removed on fifth day Did not require catheter after operation and in two weeks began to get relief from urinary trouble Recovery complete

Case 10 —Aged 68 years Right complete inguinal hernia and large enterocle, of forty years' duration, Has had urinary disturbance for almost forty years Had attacks of retention Is constantly affected with enuresis, pain in bladder and rectum Had cystitis Had been under medical treatment at times, for a year, and under special palliative treatment for three weeks, with negative result

Chloroform anesthesia Incision as after Bassini's method An enormous sac was found to occupy the scrotum There was also varicocele Testicle removed Sac dissected out high up and tied off External inguinal opening completely closed with formaldin catgut sutures Gonangeiectomy was done on left side Union by primary intention Sutures removed on fifth day Six days after operation improvement in urinary trouble began, but even after this, there were times when patient was filthy Temperature normal after fifth day, and six weeks after operation is entirely free from former trouble Prostate atrophied and feels soft to touch Left testicle also seems smaller

Case 11 —Aged 72 Bilateral inguinal hernia, but much larger on the left side Prostate enlarged Urinary disturbance

Chloroform anesthesia Bassini's method was done on right side with gonangeiectomy On left side there was found to be a large enterocele with intestines matted together and firmly adherent to sac and tunicæ Testicle was cystic Adhesions were broken up and intestines reduced Orchidectomy was done Recovery uneventful and seven weeks after operation is entirely well Prostate is smaller and testicle on right side is also diminishing in size

Case 12 —Aged 75 Left complete inguinal hernia of thirty year's duration Enterocele, cystic testicle and chronic hydrocele Enuresis Prostate enlarged, residual urine and catheter

Chloroform anesthesia Orchidectomy on left side and gonangeiectomy on right Convalescence entirely uneventful and one month after operation appears perfectly well, Taken from institution by his son five weeks after operation

GROUP IV

Cases in which herniotomy was done on one side, with bilateral gonangeiectomy, Fowler's method for hernia being used Five cases

Case 1 —Aged 60 Left inguinal hernia Prostate greatly enlarged Enuresis Inability to control urine Residual urine, requiring catheter Burning pain in penis and bladder Rectal tenesmus Medicinal treatment negative

Chloroform anesthesia —Incision down upon the sac. Hernia found to be congenital A circular incision was made around the sac and an incision laterally on upper portion of sac to internal ring Cord drawn out of the sac through lateral incision and the sac ligated Lower portion of sac left to form tunicæ for testicle Then, after Fowler's method, an incision was made through the transversalis fascia up to the deep epigastric vein and artery These were ligated and cut through The cord with the vas was resected and cut ends touched with 95 per cent. carbolic acid, was dropped below the transversalis fascia and this fascia sutured over it. The remainder of the operation was done after the usual method The right vas was resected The time consumed in this operation was more than I generally take, owing to the herniotomy being done after Fowler's method, which is equivalent to doing a laparotomy The patient made a good recovery, and was entirely relieved from his distressing urinary symptoms after three weeks

Case 2 —Aged 66 Right inguinal, scrotal hernia of seventeen years' duration Vesical and rectal distress from obstruction to prostatic urethra Residual urine, requiring catheter Medicinal treatment negative

Chloroform anesthesia —Fowler's operation and gonangeiectomy on right side, with gonangeiectomy on left side Operation and subsequent condition a success No urinary disturbance after six weeks

Case 3 —Aged 65 Left inguinal hernia with a tendency to become strangulated Was of three years' duration Prostate greatly enlarged and nodular to to [illegible] Was filthy and offensive from enuresis W[illegible] from [illegible]n and residual urine, and y[illegible] was difficult Medic[illegible] no relief

Chloroform and ether anesthesia —Herniotomy after Fowler's method was done, with bilateral gonangeiectomy Patient became confused mentally after operation, and was very filthy and hard to manage But after three weeks his mind cleared up somewhat and he was allowed to get up, after which he improved and, though suffering from senile dementia, is greatly improved as to urinary disturbance

Case 4 —Aged 62 Right complete inguinal hernia of three years' duration Suffered a great deal from prostatic trouble Had cystitis and enuresis and at times retention Catheter had to be used Herniotomy after Fowler was done, with bilateral gonangeiectomy Was up three weeks after operation, and is now entirely free from any of his former prostatic trouble

Case 5 —Left direct inguinal hernia, of three years' duration Prostatic hypertrophy with clinical history of two years' trouble, more aggravated at times After failure from palliative treatment, Fowler's operation for hernia with bilateral gonangeiectomy was done Result entirely satisfactory as to operation, and relief from vesical distress complete in nine weeks

GROUP V

Cases in which there was ventral and femoral hernia, with bilateral gonangeiectomy Two cases

Case 1 —Aged 63 Had a large ventral hernia in median line, about midway between umbilicus and symphysis pubis, of three years' duration The tumor was pedunculated and could not be reduced It made pressure upon the bladder, and was a constant source of irritation The patient has been a long sufferer from prostatic hypertrophy, and was a constant sufferer from retention and use of catheter An endless amount of treatment brought no relief

Chloroform anesthesia —An incision through the integument over the right lateral portion of the tumor revealed that the tumor was made up of omentum The omentum was ligated off in sections and removed The wound was closed by suturing separately the layers of the structures of the abdominal walls Bilateral gonangeiectomy was done The patient, being a syphilitic, made a tedious recovery The wound suppurated, and patient was removed from surgical ward four days after operation Eventually, however, he made a good recovery and became much more comfortable than before the operation The result was not so satisfactory to me, from a surgical point of view, as the others I have done

Case 2 —Aged 67 Had a large ventral hernia over site of former appendicitis operation, also a large femoral hernia on same side He was anemic and despondent through failure to get relief from distressing symptoms of long duration, caused by enlarged prostatic urethra, which had always been diagnosed as a deep seated stricture

Chloroform anesthesia —A long incision was made along outer surface of old cicatrix down to femoral opening The hernial sac was then dissected out, beginning at the neck of the sac, which was ligated high up as possible and cut away The falciform, crural and pectineal fasciæ, Poupart's and Gimbernat's ligaments were accurately approximated with No 3 formalin catgut sutures The ventral opening was also closed by carefully suturing the respective layers of the fascia and muscles with the same kind of sutures The cicatrix was cut away, and the external wound closed with interrupted silk worm gut sutures The result of this operation was perfect, the patient is greatly improved in every respect, as there was resection of both vas deferens

GROUP VI

Cases in which there was either bi- or unilateral hernia, with herniotomy and bilateral gonangiectomy Three cases

Case 1 —Aged 66 years Bilateral hernia of twenty years' duration Left hernia appeared first, had been strangulated, has had enuresis and vesical distress for three years

Chloroform anesthesia —Bassini's operation and gonangeiectomy on right side On left side was an enormous enterocele with intestines firmly knotted together and to the hernial sac. The adhesions were separated and intestines reduced Sac tied off high up and cut away Gonangeiectomy was done on this side also Patient took the anesthetic badly, requiring rapid operation Sutures removed on fifth day after operating and temperature was normal at this time Was up in three weeks, and five weeks after operation seems entirely well Prostate diminished in size and testicle smaller

Case 2 —Aged 64 years Incomplete right inguinal hernia of eight years' duration Has had urinary disturbance for seven years, enuresis, vesical pain and burning Never had to use catheter

Chloroform anesthesia —Bassini's operation on right side with resection of two inches of vas Gonangeiectomy on left side also Recovery uneventful Remained in bed four weeks, as his abdomen was pendulous and recurrence more liable Five weeks after operation is entirely well In this case, where the vas deferens was resected on left side, there has appeared a hard mass at each cut end of the vas the size of an acorn, is not painful and is easily movable

Case 3 —Aged 73 years Left side inguinal hernia of four months' duration Has had enuresis and vesical distress for three years, also pain in the back, rectum and perineum Residual urine, requiring use of catheter at times

Chloroform anesthesia —Bassini's operation on left side with bilateral gonangeiectomy Six weeks after operation still complains of pain in the back, but is entirely free from urinary disturbance, except for slight burning after urination Testicle somewhat smaller than at time of operation

GROUP VII

Case in which there was simple bilateral gonangeiectomy One case

Case 1 —History of difficult urination for three years, with enuresis, retention, frequent and painful urination, rectal and vesical tenesmus, residual urine and enlarged prostate Catheter passed with the greatest difficulty and then with only the smallest size, the obstruction being in the prostatic urethra Medical treatment negative

Chloroform anesthesia —Bilateral gonangeiectomy of one and one half inches of the vas deferens and patient walked from the operating room There was no rise of temperature Catheter was not required after operation, and in ten days patient began to get relief from former urinary disturbances

1 All these cases were confined to bed, and a thorough line of palliative treatment carried on for from three to four weeks If no benefit resulted from the palliative treatment, the patient was transferred to the surgical ward; when for two weeks before operation a stimulating diet with plenty of whisky and large doses of strychnia were administered During this time the field of operation was carefully prepared with green soap, alcohol and bichlorid of mercury compress The most rigid asepsis was followed through the preparation of the patient and the operation, with magnificent results in every case but one The superficial sutures were always removed on from the fourth to the sixth day after the operation, and two dressings were all that were required

2 Bassin's method for hernia was used in all but five cases These were done after Fowler's method, which seems very surgical to me

3 In cases where a large mass of the intestines occupied the scrotum, I returned them to the abdominal cavity three or four days prior to the operation In some cases there were adhesions preventing the reduction

4 No incisions were made into the scrotum in any case except into a small portion of the upper third, and even in cases of orchidectomy no drainage whatever was used Hot sterilized salt solution of one dram of salt to a pint of water was used to control all oozings

5 Chloroform anesthesia was used in all but one of these cases, and in this ether was substituted Though old men with sclerotic arteries, and in many instances very feeble, no evil consequences resulted from operation

6 Mental symptoms appeared in only three cases, and in these instances I believe they were due to the presence of albumin in the urine, as albumin was found which was not present before the operation, and when treated gave immediate relief to mental symptoms I would caution all operators to look well to this suggestion, as in some reported cases acute

mania developed after bilateral gonangeiectomy In a case related to me the mental trouble disappeared as soon as the albuminuria was treated

7 No recurrence has taken place in any case of this series, and they have been followed up to this time

8 In every one of these cases there has been complete relief from all former urinary disturbances, and the herniotomy has rendered the patient very much less helpless Most of the operated cases were kept in bed for from a month to six weeks, with the hope that better organic union would result, and thereby lessen the liability to a recurrence

9 From my experience I have no hesitancy in giving out the opinion that with proper study of the case for diagnosis, good preparation and rapid operating, this class of patients can be successfully treated for these grave maladies, with but little risk to life And although it is a heroic treatment, it must be admitted by all who have had any experience with the treatment of this class of patients, it is warranted, in that it renders old men comfortable and less helpless than any other method of treatment All of this series were grave cases of long duration, and although the best of preparation was made, the extreme age and feeble condition of many made it seem almost impossible for them to survive the operation Yet not a single accident has occurred, and the results have been more than could be hoped for The relief from distressing urinary disturbance has not been as immediate in any of these cases as in some reported, but no case has failed to be benefited, and in the most obstinate cases relief began to appear not later than the third week after operation In cases where bilateral orchidectomy was done, the patient became almost obese and greatly improved in general health In every case there was a diminution in the size of the prostate, and in the cases where gonangeiectomy was done, the testicle also became much diminished in size

10 *Urinalysis* In all the cases here reported pus was present in considerable quantity, and the reaction was alkalin, the reaction being taken as soon as the urine was voided On standing, the pus settled in a sticky, viscid mass, which showed the cystitis to be of a chronic character Blood and albumin were usually present in small quantities The staphylococcus pyogenes aureus, albus and citreus, and the streptococcus pyogenes, as well as the bacillus coli communi were usually present Vesical epithelium was also always found The appearance of the urine was turbid and the odor ammoniacal, the sediment sticking to the graduate on standing Previous to my service these patients had been in the habit of catheterizing themselves, and I have no doubt that this made their cases very much more aggravated

11 In no case was the *libido sexualis* retained that I am aware of

12 All cases should be given a thorough line of palliative treatment with confinement to bed In this series, of those so treated, one in four required no surgical treatment

RÉSUMÉ OF THE LITERATURE OF CASES OF ORCHIDECTOMY OR GONANGEIECTOMY IN CASES OF HYPERTROPHY OF THE PROSTATE

Ramm,[1] of Christiania, Norway, was the first (?) to perform the operation of castration for the relief of hypertrophy of the prostate He did the operation in April, 1893, and reported two cases

Case 1 —Aged 73 Dysuria for fifteen years Prostate was the size of an apple The patient was catheterized for two years, urinated every hour, did not empty the bladder, and prostate was only over ridden by catheter when two fingers were introduced into the rectum The patient had advanced chronic cystitis The urine was foul and contained blood Three days after the operation the size of the prostate was diminished very materially, and at the end of some months the patient passed water twice at night, and three or four times during the day

Case 2 —Aged 67 Sixteen years previously the patient was treated for retention of urine Ten years later a suprapubic puncture was made for the relief of the retention Before the operation the patient's bladder was distended nearly to the umbilicus, and catheter was passed with much difficulty The night after operation he passed eighty c c of urine in a jet Prostate diminished rapidly in size Ten days after the patient passed water seventeen times in twenty four hours, while two months after the operation he was compelled to urinate about five times a day, and once at night. The prostate felt soft

Dr Ramm summarizes his views as follows

1 After castration of adults the prostate shrinks

2 Hypertrophic prostrate shrinks after castration, beginning a few days after operation

3 Shrinkage of volume of the prostate can be used after double castration as a means of removing the mechanical obstacle to urination (*Centralblatt für Chirurgie*, Vol 21, pp 387-388)

Haynes was the first in America to perform castration for the relief of hypertrophied prostrate

Case 1 —Double castration in a case of prostatic hypertrophy where the symptoms lasted for two years Eighty four days after operation "the patient was actually cured "

Case 2 —Complicated by acute cystitis and morphin habit Catheter inserted every two hours Double castration After operation cystitis disappeared and patient passed urine spontaneously Use of catheter every five hours Morphin habit also cured

Case 3 —Patient operated on fourteen days prior to the time the case was reported Catheterization was almost impossible owing to the abnormal development of the prostate Result not stated (New York *Med Journ* , 1895, Vol 61, p 584)

M Rochet remarks that castration for hypertrophy of the prostate may be considered as a barbarous method, and that deferent resection, simple or double, is far from having established proofs (Lyons *Médical*, Janvier 2, 1898)

Sir Henry Thompson says that one man of every three over 55 years of age, examined after death, showed some enlargement of the prostate, one out of every seven had some degree of obstruction present, while one in fifteen had sufficient enlargement to demand some form of treatment In this country, according to the last census, there are more than three million men over 54 years, and of those, according to Thompson's estimate, about two hundred thousand are sufferers from hypertrophy of this gland The classification of the remainder White arranges as follows

1 The condition of the prostate as to size and density

2 The amount of pain

3 The amount and character of residual urine

4 The frequency of catheterism and its ease or difficulty

As secondary conditions, he notes 1, the age, 2, the sexual power, 3, the conditions of the kidneys, 4, the general conditio [illegible]

White [illegible] t [illegible] , 000 cases into groups

Grou [illegible] ar ement,

tle or [illegible] exte

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[1] There is now no doubt that D Francis L Hayers was the first operator to do orchidectomy or gonangeiectomy for hypertrophied conditions of the prostate

three or four ounces, and who never use catheter If patient is not old, he retains sexual power, sound kidney, castration should not be considered

Group B includes patients with large prostate the size of a lemon, with eight or ten ounces of residual urine, and with difficulty in the introduction of catheter Then the choice lies between vasectomy, castration and prostatectomy

Group C includes patients with prostate from the size of an orange to that of a base-ball Cystitis is marked and the catheter introduced with difficulty In these cases castration is preferred, also vasectomy may be first tried

Group D, desperate cases, those in which the prostate is enormous, the cystitis excessive, the bladder dilated and atonied, retention, catheterization difficult, and occasionally impossible Such patients are generally of advanced age and suffer from toxemia—a combination of uremia and sapremia

Castration under these circumstances offers far more hope of benefit and less risk than any other operative procedure In this class of cases the mortality is high

As to the prospects of cure after operation, White says that in every thirteen cases of recovery, we should count upon eleven being complete cures He states that clinical experience justifies the assertion that in a large proportion of cases (thus far in approximately 87 2 per cent) rapid atrophy of the prostatic enlargement follows the operation, and that disappearance or lessening in degree of long standing cystitis (52 per cent), more or less return of vesical contractility (66 per cent), amelioration of the most troublesome symptoms (83 per cent), and a return to local conditions not very far removed from normal (46 4 per cent) may be expected in a considerable number of cases

The mortality in castration is 18 per cent , in vasectomy, 12 per cent But it must be remembered that the patients in Class D, or worse, patients actually dying from uremia or sepsis, have been subjected to these operations It is important to note that even in the desperate cases which make up the series of deaths, 75 per cent showed improvement of symptoms or of shrinkage of the prostrate before death (*University Medical Magazine*, 1897, Vol ix, p 469)

(*To be continued*)

SOME RECENT OBSERVATIONS UPON ACUTE INFLAMMATION OF THE PROSTATE GLAND

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association held at Denver Colo June 7-10 1898

BY LISTON HOMER MONTGOMERY, M D
CHICAGO ILL

I selected my topic, even at the risk of promulgating but few new ideas and as well, no doubt, of going over much ground that you are already familiar with

Anatomy of the gland —In brief, the prostate gland in structure as well as in function is rather a muscle than a gland, composed chiefly of unstripped muscular fibers, and has an inner or circular layer which is continuous in front with those surrounding the membranous urethra and behind with the muscular coat of the bladder The outer layer beneath the fibrous capsule forms a sheath for the gland, while beneath them the glandular structure is imbedded, or, according to Park, the prostate, its utricle, the dilated extremities of the vasa deferentia (called ampulla), and the seminal vesicles are, like the uterus and tubes of the female, enclosed in a thin fibrous sheath, which he has called the broad ligament of the male The gland is divided into two lateral lobes by a deep sulcus or notch posteriorly and by a furrow at the upper and lower surfaces, while the so called middle or third lobe, is the portion situated between the two lateral lobes at the under side and the weight of posterior part of the gland, adjacent to and beneath the neck of the bladder The prostate in normal health is one half ounce in weight and is about the size of an ordinary horse chestnut

Varieties of inflammation —There are two varieties of acute prostatitis—the follicular and the parenchymatous, either of which may be partial or complete as well as acute or chronic Discussion of the latter grade of this disorder, however, does not come within the purview of this paper

The follicular forms when resulting in abscess are rarely large, and almost invariably discharge themselves into the urethra, while the acute parenchymatous variety is more serious, because the entire substance of the gland is inflamed (as in a sort of cellulitis) and great disorganization may occur, involving the entire glandular and connective structures of this complex organ

Etiology —Acute prostatitis, whether it results in abscess of the gland or not, as is well known, may be due to trauma, or it may occur as an abscess—frequently does—elsewhere in the human economy, due to a probable remote predisposing cause, or due to causes wholly idiopathic in character Among the latter may be enumerated a natural tendency toward a delicate constitution, which, when produced in an idiopathic manner, is not frequently seen

The causes regarded as traumatic which may induce this disease not only include the incautious introduction of instruments a contusion to the perineum, vesical and rectal tenesmus, obstinate constipation, formation of scybali and hemorrhoids with their incidental phenomena may also be a direct cause to bring on the disease Gonorrheal infection, when unchecked and extending to the prostate, is almost invariably regarded as one of the most frequent exciting causes of the disease, as the tissues about the gland are a formidable soil for the growth of pus bacteria and its sequelæ

The disease has been known as a complication in certain forms of acute febrile disease It has been reported also as a sequel of smallpox, scarlet fever, typhoid and typhus fever The various toxemias of infectious fevers produce venous stasis, which endangers the endothelium of the organ, or where there is a transudation in the blood vessels, as osmosis, or an altered condition of the blood which involves a malnutrition with nerve disturbances in the gland, or an altered blood plasma that results in congestion of the gland and prostatic plexus of veins may all be regarded as excitants to induce the disease, particularly is this true in old persons Although doubtless extremely rare, infection from various forms of rectal disease, due to the propinquity or proximity of those parts, may be regarded as a possible exciting cause, notwithstanding the firm capsule of the gland It would seemingly offer a sufficient obstacle and prevent the entrance of germs through that channel On the theory of using instruments, strong injections, horseback riding and, I have excellent reasons for believing that too much bicycle riding will produce the disease, due to the rider assuming a false position on the saddle or attributed to some possible faulty construction of the saddle, producing jolting, jarring, over-exertion etc , resulting in irritation, congestion and disease of these vital structures Sudden shocks about the perineum, induced in whatever manner, may be an exciting cause of this difficulty Purulent or putrid cystitis, or pyelonephritis may also induce the follicular variety of the disease, although as has been stated hematogenous prostatitis is comparatively a rare disease Should it occur, however, it would be expected to be due to a deficiency or reduction of oxyhemoglobin in the red corpuscles throughout the body

Stricture of the urethra when long neglected may well be regarded as an active factor in exciting this disease, and some authors have said that a contracted meatus and phymosis are causes If this be true, it is doubtless due on the same theory as stricture namely, that at times of micturition a free exit of urine is not voided with the facility in which this act should be performed Syphilis is said to be an exciting cause, and calculi, especially when retained in the bladder in the vicinity of the gland, is another exciting cause to produce inflammation of it

Taking cold, which first induces congestion and subsequently is followed by inflammation of the gland, is also an exciting cause Too frequent indulgence in alcoholic beverages and other causes that induce a sexual hyperemia followed by irritation or excitation of the gland, are doubtless true causes of a certain proportion of this distressing and sometimes serious malady Excessive purgation is mentioned by Bumstead as a cause Cantharides and other irritant drugs are cited as a cause by Loomis and Thompson Senility doubtless is a contributory cause in a certain proportion of cases

Urinary infiltration and frequent retention of the renal secretion, whether it is of an abnormally acid or alkalin reaction, may induce the trouble On the other hand, the stream of urine is greatly diminished in size, or retention may occur and be due to the inflamed gland, or to an edematous condition of the gland or to infiltration of exudative matter around it (as will be stated later), to the formation of purulent matter within the prostate Vasomotor disturbances that induce edema and hyperemia may cause inflammation of this gland, cellular exudation or serous exudation, especially in a neurotic subject, may induce either form of the disease in persons whom for want of a better term, I have denominated those who are prone to "idiopathic prostatic neurosis"

And lastly, I may mention that vague cause, "due to reflex disturbances," as a possible or probable one under certain conditions that would be likely to excite inflammatory action of the gland Hypertrophy, atrophy tubercle, malignant disease, etc , will not be considered as exciting causes of the disease in the strict sense and literary construction of the title of this paper

Age —Recent observation has led me to believe (according to my experience) that it is most frequently met with between the ages of 25 and 40 years, although as per the foregoing remarks, idiopathic or traumatic cases may supervene at any period of time after this limit, the former particularly, when the person afflicted is of a rheumatic or gouty diathesis

Symptoms —The symptoms that lead the surgeon to suspect inflammation of the prostate gland are the following After eliciting a personal history of the case, and if the premonitory symptoms do not subside there is increased pain about the gland There will be some difficulty in micturition and great pain experienced in bowel movement, often spasmodic in character when the patient tries to void his urine, accompanied by great distress and irritability of the neck of the bladder Nervous chills followed by fever will give rise to strangury, and symptoms of a septic nature may supervene, in addition to which there will be nausea and restlessness One of the early symptoms of the process of suppuration is a throbbing sensation accompanied by a dragging down weight and feeling of distention about the rectum, perineum, sacral region and neck of the bladder, this may extend to the lower part of the abdomen and suprapubic region as well as to the distal end of the glans penis and scrotum There is also loss of appetite, constipation, a furred tongue, emaciation, anxious facies, despondency and dread of an operation

Diagnosis —In this it may be difficult to decide whether the disease is circumscribed and wholly of the gland, or whether it be periprostatitic in character

Wyman says that "this affection is one which is entirely overlooked until it manifests itself by a gush of pus from the urethra or rectum, and rarely into the cavity of the perineum " Ziegler says "inflammation of the prostate gland is often associated with inflammation of other parts of the urogenital system, such as gonorrheal urethritis purulent or putrid cystitis, etc , and that hemtaogenous prostatitis is rare " A digital examination (*tactus eruditus*) per rectum or manipulation bi-manually, will disclose that the gland is excessively sensitive and much enlarged The anterior wall of the gland or its corporeal portion projects or is pushed into the bowel If the feces are inspissated, defecation is most distressing, and so acute is this that the pain radiates along the hypogastric plexus of nerves

Prognosis is usually favorable, as the disease in the majority of cases will result in recovery, either as a result of resolution or suppurative process with spontaneous discharge into the urethra or rectum, or in a few instances that I have seen, by both of these channels Occasionally death will ensue through the intervention of sepsis, subsequently, if a morbid condition of the gland remain Such defect must be ascertained, then, if possible, corrected

Treatment —In general the patient should be confined to bed and placed upon a milk diet, early application of leeches to unload the engorged prostatic plexus of veins, and hot fomentations to the perineum followed by free evacuations of the bowels with saline aperients Copious draughts of demulcent drinks to dilute the urine should be administered Hot hip baths, twice or thrice daily, should be given, although Wyeth recommends that "ice bags applied to the perineum will be found agreeable and of value," and that "suprapubic aspiration may be demanded in severe cases "

On the other hand, DaCosta says, "adjust hot sandbags to the perineum and hypogastrium " If the abscess has burst into the urethra and the stream of urine is very smal' [illegible] v [illegible] ecessary to introduce by most gentle [illegible] ha [illegible] catheter, well oiled Do [illegible] th [illegible] can avoid doing so

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7854

dispense with all kind of catheterization A gentle massage process to favor the discharge of pus is indicated in certain cases If shreds of mucus casts collect, compared to croupous exudation as stated by Van Buren and Keys, and are cast off per uretheram, do not mistake these for spermatorrhea

Enough anodyne and hypnotic remedies should be administered per orem or in suppositories to assuage pain, and if a soft catheter should have to be resorted to and the pain is excruciating, this can be facilitated under local anesthesia, and in a few instances if stricture is present, electrolysis to dilate the urethra may be found necessary

My plan consists primarily, after ascertaining by examination, if suppuration has occurred, if possible, in washing out the abscess cavity with hydrogen peroxid to favor the exit of discharge In no instance do I retain a drainage tube *in situ*, as it retards the closure of the fistulous opening This is followed by a copious enema of as hot water as can be well borne and injected into the rectum Hot hip baths at a temperature of 105 degrees F to 110 degrees F should be given as frequently as seem agreeable to the feelings of the patient Avoid administering morphin internally if you can Do not permit the patient to strain at stool nor while he is voiding his urine, as this will surely aggravate the symptoms

On the theory, as above stated, that toxins are retained in the circulation and within the gland, and the disease, when it continues, acts on the nervous system, intricate microscopic changes having occurred, and with the view of preventing degeneration in the gland substance, I administer freely *triticum repens* or fluid extract of tritipalm as a genito-urinary tonic in combination with infusion of gum arabic or flaxseed Along with these remedies the mineral waters, particularly Vichy and citrate of potash, go well together Hydrate of chloral or this salt combined with the alkalines of antikamnia and the bromids are the very best anodyne remedies to control pain and spasms of the neck of the bladder These pharmacologic or medicinal remedies are the most logical to use in my judgment, while externally, applications of antiphlogistine, inunctions of a 10 or 20 per cent of iodoform, lanoline preparation, as well as of mercury, are also of much value

I have also resorted to the internal administration of fluid extract secale cornutii, alternated with iodid of potash, with the view to restore contractility of the gland and to favor absorption of the plastic material deposited in it The application of electricity and of the galvano-farradic current to the prostatic urethra may be tried to obtain similar results

Secondly and lastly, a cheerful prognosis should be given to the patient, as well as substantial general tonics that are readily assimilated and will be most likely to produce metabolic action, are indicated to bring about complete convalescence

If time permitted, I would recite the histories of several interesting cases in detail, but I am well aware that the Section know these general ideas find characteristics without my taking further time to do so

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Weighing in Tuberculosis —Wolff Immermann calls attention to the benefits to be derived from systematic, accurate weighing in the treatment of tuberculosis He considers the scales as important as the thermometer The average gain in weight in his sanitarium, Reiboldsgrün, is 360 grams a week, without over *feeding* or *remaining* in bed He advocates appropriate exercise —*Munich Med Woch*, June 21 and 28

VENTRAL HERNIA AFTER APPENDECTOMY

Presented to the Section on Surgery and Anatomy, at the Forty ninth Annual Meeting of the American Medical Association held *at Denver, Colo June 7-10 1898*

BY M M JOHNSON, M.D

HARTFORD, CONN

The immediate consideration in appendectomy is the saving of life and the restoration to health of the individual patient Many operations with a faulty technique have accomplished this The remote consideration is the integrity of the abdominal wall This necessitates a careful consideration of the operative technique and the avoidance of many unnecessary procedures in the after-treatment which interfere with the closing of the wound

The frequency of ventral hernia after appendectomy is inferred from the fact that fifty cases referrable to this cause, were observed at the Hospital for the Ruptured and Crippled, in New York City, in two years (Coley) A still greater evidence is the great demand for trusses and supporters of the various kinds by those upon whom the operation has been performed

Incisions—There are seven well-recognized incisions The V-shaped, the L shaped, the T-shaped, the obtuse angle, the long straight, the short straight, and McBerney's well known incision, where the different layers are cut at different angles These may be classified as the *long* and *short* incisions When considering the relation these incisions bear to ventral hernia, we are confronted with the following facts

1 Nerve supply, according to Woolsey (*Annals of Surgery*, Jan 1898, p 3), who points out the most important element in abdominal surgery as the nerve supply, comprising the six lower dorsal, the ilio-hypogastric and the ilio inguinal nerves Their motor portions pass, for the most part, between the internal oblique and the transversalis muscles, which, together with the external oblique, they supply, and then they pierce the sheath of the rectus muscle to furnish its motor nerve supply "Their division causes paresis and atrophy of the muscles, weakens the abdominal wall and predisposes to hernia" Therefore, the longer the incision the more nerve fibers will be severed thus increasing the chances of ventral hernia

2 The making of the incision as much as possible through muscular tissue according to Woolsey and McBerney, is open to well-founded objections When the contracting and relaxing function of the muscles is taken into account, it is evident that the cicatricial tissue is constantly subject to a powerful tension, followed by relaxation, which when long continued has a tendency to weaken the cicatrix, and in time it gives way and is a factor in the causation of hernia

3 The after-treatment should be as free as possible from undue irritation The packing of the abdominal wound with gauze should be mentioned only to be condemned It is not only unnecessary but decidedly harmful It is a great source of irritation and discomfort to the patient The pressure on the inflamed intestine may cause perforation, or intersuseption The theory upon which the wound is packed with gauze is first, to prevent the pus from passing into and infecting the abdominal cavity, second to secure free drainage Experience teaches us that the former condition is not secured, on the contrary the distention of the wound and separation of the parts is favorable to abdominal infection The latter

condition—good drainage—is rendered difficult or impossible when the wound is pressed full of gauze Leave the pus cavity and abdominal wound free from unnecessary interference, and nature will in a few hours shut off the septic region, by building a firm wall of protective adhesions around it The healing process will not be delayed, and in a great percentage of the cases there will be no trouble from a future ventral hernia

While it is hard to lay down any hard and fast rules, as the incision must conform to the particular conditions in each case, yet an operator has a characteristic method which he follows The incision which combines conditions most favorable is a straight incision, not more than one and one-half inches in length, just external and parallel to the rectus muscles in the fibrous tissue of the linea semilunaris In this location an easy and bloodless passage can be made to the cavity, and it is the only safe place one can be made in a pus case The incision is closed in three layers first, the deep aponeurosis and peritoneum are closed with a continuous catgut or kangaroo tendon suture, second the superficial fasciæ are closed in a similar way Third the skin is united with a number zero catgut suture When thus properly united it gives a firm cicatrix and is not liable to give way

I have had four cases of women who have borne children after an appendectomy without injury to the abdominal wall, two were operated upon during pregnancy With the short incision the nerve supply is not cut off from the abdominal muscles

In pus cases, the incision is seldom more than an inch and a half After the abscess is cleansed with pyrozone, and washed out with the saline solution, a wick drainage is placed in the lower angle of the incision and the wound is closed, except for the drainage The wound is never packed with gauze, for reasons previously stated. The following case came into my hands for operation for the radical cure of ventral hernia following an operation for appendicitis

M R, a boy aged 4 years, was operated upon for suppurative appendicitis by Dr S, July 17, 1895, at the Hartford Hospital Later a fecal fistula occurred, for the closure of which four operations were performed, the last and successful one by Dr Wiggin of New York During the treatment a rubber drainage tube was lost in the cavity The patient returned home Aug 19, 1896 In December following, an abscess formed on his back just above the brim of the pelvis Jan 2, 1897, the abscess broke and discharged, and the rubber drainage tube was drawn out through the opening He was taken to St Francis Hospital in October, 1897, to be operated upon for ventral hernia, where the following measurements were made by Dr Geo C Bailey The opening in the abdominal wall was three inches wide and three and a half inches long The prospect for a successful operation was so uncertain that the members of the surgical staff were opposed to having the operation performed in the hospital The patient was taken to my private hospital, where the operation was performed Nov 27, 1897

An incision was made the entire length of the opening in the abdominal wall, adhesions were broken up so as to free the intestines from their attachment to the abdominal wall The tissues were dissected back so as to expose the free border of the rectus muscle Four silver wire sutures were inserted an inch from the free border of the incision The muscles were brought together by a continuous kangaroo tendon suture, passed through all the subcutaneous tissues, including the border of the rectus muscle, as they could not be separated, owing to the long-continued and inflammatory and suppurative process The skin was then closed by a continuous kangaroo tendon The silver wire sutures were drawn firmly together so as relieve the tension on the stitches through the muscles At the end of one week the wire sutures at the end of the incision were removed, one of the remaining was removed in ten days and the last in two weeks A liquid animal diet was given to prevent the distention of the abdomen until a good union had taken place The patient made an excellent recovery At the present time there is no sign of the return of the hernia

As a result of tracing two hundred consecutive cases following appendectomy in reference to ventral hernia, while not absolutely complete yet nearly so, my statistics are as follows

Class 1 Cases without extensive adhesions—infected exudate masses of pus, 52, hernia, 0

Class 2 Cases with extensive adhesions—without infected exudate masses of pus, 54, hernia 0

Class 3 Cases with infected exudate masses or pus, 48, hernia, 6

Class 4 Cases with infected exudate masses and pus—with perforation and gangrene, 46, hernia 4

Total number of cases 200, hernia 10, or 5 per cent

CONCLUSIONS

The factors in the production of hernia, following appendectomy, are, 1 Long incision 2 Cutting off nerve supply to muscles 3 Incision made through muscular tissue 4 Closing the incision with a single set of sutures in one layer 5 Packing the wound with gauze 6 It is a question if the length of the incision is not more important than the tissues through which it is made

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ADRENAL TUMORS OF THE KIDNEY

[ABSTRACT]

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association held at Denver Colo, June 7-10 1898

BY BAYARD HOLMES, M D
CHICAGO ILL

Grawitz first described a group of tumors of the kidney which resembled the adrenal tissue in histologic elements He named these tumors or this condition struma supra renalis aberrata, and from that time on a war has been waged over these forms under various names, all of which are more or less significant We may say, however, that at present, a tumor of the kidney is recognized, growing out of remnants of the embryonal adrenal gland left behind in the kidney substance itself Similar tumors are found throughout the whole genito-urinary tract These tumors are sometimes malignant, but more often benign They sometimes produce constitutional symptoms, but usually they come to the notice of the physician or surgeon solely on account of their size and location

The case which I wish to present to you very imperfectly and briefly is an illustration of that form of adrenal tumor which produces on the one hand constitutional symptoms of a most marked character, and on the other hand, [illegible] the [illegible]nancy of metastasis

Mr John C, 56 yea [illegible] care of

Dr Edgar Hawley of Chicago in March, 1897 He had been a healthy, temperate man, and suffered no disease worthy of mention during his whole life He had always led a moderate life, and been occupied most of the time in active office work, but during the past six or eight years has been confined for a reasonable number of hours each day to book keeping During the week preceding his illness he had lost in strength and appetite, but had slept well, complaining only of occasional loss of breath

Dr Hawley was called on the second day of the patient's absence from work The patient was lying upon his right side, his breathing was rapid and he complained of excessive pain in the region of the right thorax His pulse was slow, 72, and his temperature low, 99 He coughed frequently and expectorated a bloody mucus resembling the rusty sputa of pneumonia The patient's face was blanched, his lips red, but turgid, and an examination of the thorax revealed dulness over the whole lower half of the right lung, accompanied in places by complete absence of vocal transmission, while in other places, especially in the upper front part of the chest, there were many spots of bronchial breathing and crepitant râles The area of cardiac dulness was greatly increased, and the area of hepatic dulness projected 2½ to 4 centimeters below the border of the ribs The patient's digestive functions were carefully examined without disclosing any significant fact Urinalysis showed that it contained no abnormal constituent, except an increased quantity of indican and an increased quantity of all the normal constituents The patient was able to rise and sit up to drink and for stool Symptomatic treatment was instituted On the third day of observation the pleuritic effusion was so great and the dyspnea so severe that Dr Hawley removed three pints of bloody serum with the aspirator The temperature remained about 99 and the pulse varied between 70 and 80 Two days later it was necessary to remove another quart of effusion, and a week after the beginning of treatment I was called in consultation on account of the gravity of the symptoms and the failure of the consolidated lung to show any symptoms of resolution

When I saw the patient he was suffering from terrible dyspnea His face was full, but blanched His lips were a bright red His eyes were bright and expressive He seemed to weigh about a hundred and seventy pounds There were no symptoms of emaciation His hands were thin and white His whole appearance reminded me of sclerosis of the kidney, and I instinctively uncovered his legs, expecting to find them greatly swollen with edema I was surprised to find the legs and feet solid, but well-formed and excessively pale The pulse at this time was hard and full, and very slow 70 to the minute The temperature was not quite 100, and it had never been above 100 5 at any time My examination confirmed the examination of Dr Hawley There was a considerable effusion in the right pleural cavity, with a large mass of atelectatic tissue above it The liver was depressed about 4 centimeters, but did not extend abnormally to the left The heart's apex was 3½ inches from the median line, but the area of cardiac dulness extended at least 2 cm farther to the left and 3 cm lower than normal The heart's apex was readily recognized on account of the fierce stroke which it made on the wall of the thorax A careful examination of the left lung detected bronchial breathing and cog-wheel respiration in two or three places in the upper lobe, but on account of frequent coughing, these observations were not considered significant The patient frequently expectorated a tenacious mucus which was once in a while tinged with blood No very satisfactory examination of the abdomen could be made, because the patient could not lie down on account of the dyspnea I assisted Dr Hawley to remove the effusion We succeeded in aspirating three pints of bloody serum The character of this effusion resembled that which I had observed in cancer of the lung A microscopic examination of this serum did not reveal any bacteria, but showed the presence of red blood corpuscles, white blood corpuscles and a few epithelial cells of uncertain origin The examination of the sputa did not disclose the presence of the pneumococcus After the removal of the effusion, the liver came back to its normal position under the border of the ribs

With the absence of the evidence of pneumonia, with the absence of cachexia, with the sudden onset of the disease and its rapid course, I was only able to make an unfavorable prognosis, leaving the diagnosis entirely to the postmortem The subsequent course was similar to the preceding The dyspnea continued, the pulse remained very slow and hard and full The patient complained of no pain, and the temperature never rose above 100 5

The postmortem was made three weeks after the beginning of the disease and twelve hours after death It was made by Dr Henry D Galloway and Dr Edgar Hawley in the presence of the house staff and nurses of the Baptist Hospital

The body was that of a well nourished man, apparently fifty years old Postmortem rigidity had begun There were no marks of swelling or edema and only a small puncture where the last aspiration had been made between the fifth and sixth ribs in the right axillary line The right thorax was dull on percussion, the left resonant On opening the right pleural cavity, a large quantity, probably a quart, of bloody serum without flakes or clots was removed. The right lung was a mass of solid tissue, which on section showed it was composed of light, reddish masses, contrasting sharply with the bluish-black and mottled appearance of the intervening edematous lung These masses were hard and firm, and did not subside under pressure They were of a uniform texture, and seemed to be the outgrowth of multiple centers The left pleural cavity contained three or four ounces of clear serum The left lung presented a normal, but highly pigmented appearance The lymph glands at the root of the lung were filled apparently with years of accumulated coal dust Three foci similar to those in the right lung, but no larger than hazel nuts, were found in the lower part of the upper lobe of the left lung The pericardium was filled with six ounces of clear serum The heart muscle was firm, and the ventricles contracted The coronary arteries were markedly sclerotic The valves of the heart were competent, but showed marked sclerosis, and in places calcification The abdominal cavity was free from fluid The liver and spleen were normal, excepting for a general arterio sclerosis The stomach and intestines presented no marked abnormality The right kidney was of normal size and shape and position, and was connected with the bladder by a normal ureter The right adrenal body was of normal size and shape and location The left kidney was surmounted on its upper end by a firm, hard tumor, the size and much the shape of a small clenched fist Like the right kidney, it was surrounded with fat On section the kidney itself seemed perfectly normal, except that it was encroached upon in its upper part by the tumor, but separated sharply from it by a wall of connective tissue This kidney was connected with the bladder by a normal ureter, and there is no reason to believe it in anything but a healthy condition The cut section of the tumor showed that it was composed of various nodules, the center of each of which was in a more or less advanced stage of apparently fatty degeneration In a few places masses apparently of old extravasated blood were to be found The growing portions of the tumor were nodules the size of peas, and at the periphera of the tumor The blood supply of the tumor seemed to be rich, and on carefully dissecting up the renal vein, the tumor was found to have invaded it so as to actually hang into its caliber

Microscopic examination of this tumor showed that it was a typical struma suprarenalis aberrata of Grawitz Microscopic examination of the tumors found in the lungs showed that they were of the same character

A study of the literature of this subject may be summarized in the following conclusions

1 Remnants of the adrenal body are found in various parts of the genito-urinary tract in a large per cent of all postmortems (90 per cent)

2 The suprarenal capsule or adrenal body is a ductless gland essential to life It secretes a substance which slows the pulse, contracts the capillaries, and removes the pigment from the skin When it is destroyed or removed, the patient dies, or if partially destroyed, he takes on the condition recognized in Addison's disease When the adrenal body is greatly increased in its function, the skin is blanched, the heart's action is increased in power, but slowed, and the capillaries are contracted, and the whole vascular system undergoes the degeneration of arterio sclerosis

3 About one-third of all the tumors of the kidney appearing in adult life are of adrenal origin, but only a small proportion of these show a tendency to metastasis, and these metastatic foci are usually confined to the lungs or to the bones, and only rarely are they found in both places

4 A few of the adrenal tumors produce the symptoms of poisoning with the adrenal extract The poisoning does not always seem to be proportionate to the size of the tumor

5 The removal of the tumor before metastasis takes place results in subsidence of the symptoms of poisoning The tumors may be removed without loss of kidney substance, or by a complete nephrectomy

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CLINICAL RESULTS OBTAINED BY THE USE OF MY INSTRUMENT FOR COLLECTING THE URINE SEPARATELY FROM THE TWO KIDNEYS

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Colo June 7 10 1898.

BY M. L HARRIS, M D
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CHICAGO ILL

A description of my instrument for obtaining the urine separately from the two kidneys was published first in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Jan 29, 1898 and again in *Medicine* in April, 1898 The object of the present paper is to present a few clinical facts obtained by the use of the instrument, which demonstate its advantages, applicability and reliability

Case 1 —Mrs D , age 31 years, American, without particular hereditary tendency Except for present trouble she has always been a strong, active, healthy woman About four years ago she began to have pain in the lumbar region The pain was dull and intermittent and increased by violent exercise such as dancing, driving or riding in the cars The attacks of pain increased in frequency and severity and in a year or two the urine after exercise, particularly dancing, was very dark in color and there would be a desire to urinate frequently Twice she had attacks of severe pain in the left lumbar region followed by the passage of a small calculus The pain in the back became almost constant and she was obliged to discontinue all exercise on account of the great increase of pain and hematuria excited thereby The urine contained blood almost constantly, although, except following exercise, it was so slight in amount as to require the microscope for its detection

On Feb 14, 1898, by means of my instrument I collected *the urine separately from the two kidneys* An analysis of the urine thus collected is as follows

	Right kidney	Left kidney
Amount collected in 20 minutes	12 c c	10 c c
Color	Clear amber	Cloudy very light brown
Reaction	Neutral	Strongly acid
Urea	0 7 per cent	1 2 per cent
Albumin	Slightest possible trace	Small amount
Microscope	Negative	Red blood cells abundant, numerous flat epithelial cells singly and in masses of several hexagonal cells few leucocytes

This analysis pointed very conclusively to the left kidney as the seat of the trouble, and taken in connection with the history made a diagnosis of renal calculus certain One very interesting point shown by the analysis is the marked difference in the reaction of the urine of the two kidneys secreted at the same time That from the right side being *neutral* while that from the left side was strongly *acid* As the reaction was taken at once before secondary changes could take place an interesting point is thus brought up, namely, to what extent local conditions within the kidney may influence the reaction of the urine It may be mentioned here, as adding to the interest and importance of this point, that the calculus found in the left kidney was composed of almost pure uric acid As the patient had received prolonged medical treatment without benefit surgical measures were decided upon and on March 8, 1898, an incision parallel with and one centimeter below the twelfth rib was made, exposing the left kidney, which was cleared of its surrounding fat Nothing abnormal could be detected by sight or palpation of the kidney The pelvis of the kidney was then opened by an incision along the convex border In passing through the substance of the kidney a small abscess containing six to eight cubic centimeters of thin light brown pus, was evacuated A calculus was found lodged in one of the calyces and removed It was only with considerable difficulty that the calculus was found and removed even after the finger had free access to the pelvis The pelvis of the kidney was washed with hot sterilized water, the kidney sutured with catgut and the incision closed in layers, except at the angle, where a small iodoform gauze packing extended down to the kidney This was removed on the second day Healing followed [illegible] ith perfect recovery

Case 2 —Mr [illegible] years [illegible] history good, never had [illegible] except gonorrhea, wh [illegible] ago following had a severe illness lasting about six weeks It was attended by fever, pain in the right side of the abdomen and right lumbar region During this illness there was a sudden discharge of a large quantity of pus with the urine He has never been well since this acute attack although he has been around and able to do some work He has suffered almost constantly from pain in the right lumbar region, frequent urination, which is better and worse at times, and occasionally has spells of fever with chills, sweats, etc. There is pus in the urine constantly Is pale, anemic, considerably reduced in flesh, and quite weak His temperature varies from 100 to 103 5 degrees F He sleeps poorly and has frequent night sweats, appetite poor, no cough He urinates frequently, without difficulty The urine contains considerable pus, although he says it is now what he calls quite clear, not containing as much pus as it does at times Upon examination a large, rather firm, quite fixed tumor is easily felt in the region of the right kidney All other organs appear to be normal A clinical diagnosis could be made of cystitis with pyonephrosis of right kidney, probably of gonorrheal origin

The main questions to be determined were Is the left kidney already involved, and is it able to do the work alone, provided the right kidney be removed? To determine these points, on Feb 19, 1898, I collected the urine with my instrument Owing to the presence of the cystitis, the bladder was thoroughly irrigated with sterilized water after the instrument was introduced and fixed in position The urine all came from the left side, not a drop was found to come from the right kidney The analysis of the urine thus obtained showed amount in twenty minutes 14 c c, perfectly clear, dark amber, acid, urea 2 3 per cent, albumin, very slight trace, very few flat epithelial cells, scattering leucocytes and a few cylindroids The value and efficiency of the instrument are clearly demonstrated in this case

Notwithstanding the existence of cystitis and a large amount of pus in the urine, we were enabled by the instrument to attain perfectly clear, practically normal urine from the left kidney It demonstrated to us that the left kidney was normal and that it was doing all of the work The amount collected, 14 c c in twenty minutes, is equivalent to 1008 c c in twenty-four hours By actual measurement the amount passed in twenty four hours was 1057 c c This again shows that the left kidney was doing all the work, and demonstrates how perfectly the septum is formed by the instrument in the bladder It being satisfactorily shown that the left kidney was normal and able to carry on the work alone the patient was operated on Feb 21, 1898 A long oblique incision was made beginning near the outer end of the twelfth rib and extending downward and forward internal to the anterior superior spine of the ileum The kidney was found embedded in an immense mass of thickened, firm, connective and adipose tissue containing numerous foci of suppuration One large perinephritic abscess containing from 100 to 200 c c of thick yellow pus was evacuated It lay between the superior pole of the kidney and the inferior surface of the liver The kidney was found to be a mass of innumerable small abscesses There was no dilatation of the pelvis The whole kidney was so involved in a dense connective tissue mass that no pedicle composing the vessels for ligation could be formed Two large angular clamps were therefore applied to grasp the renal vessels, and the kidney with considerable of the connective adipose mass removed The clamps were left in place and the wound packed with plain sterilized gauze Considerable shock followed the operation and for forty-eight hours the patient was quite low At the end of this time the clamps were removed He now began to improve rapidly, temperature became normal, and he left the hospital March 12, less than three weeks from the date of operation, with the wound almost healed The cystitis improved remarkably, the urine, which he was passing freely contained but very little pus when he was discharged

Inoculations made from the perinephritic abscess on blood serum agar developed a diplococcus resembling the gonococcus, which died out in the second generation The kidney upon examination was found to be tuberculous and the secreting portion practically destroyed

Case 3 —Mrs S, age 39 years, American has been suffering many years with what was supposed to be cystitis She had painful and frequent urination with pyuria, the frequency becoming so great that she was obliged to wear a urinal constantly She also suffered with a burning pain in the sacral region, which frequently extended into the thighs She had some pain in the lumbar region, which was always referred to the left side and no pain on the right side She was treated for years for bladder trouble, receiving all manner of irrigations, local application, etc., without benefit She then came into Dr J Frank's hands, who, upon cystoscopic examination, decided for the first time that her trouble was not located in the bladder Dr Frank tried cauterization of the ureters, after Kelly's method, and, although he succeeded repeatedly in catherizing the left side could never succeed on the right side There was no tumor to be felt in the region of the kidney on either side, but some pain was always referred to the left side Through the kindness of Dr Frank I was asked to examine her with my instrument This was done, March 10, 1898, with the following result

	Right	Left
Amount collected in 20 minutes	8 c c	10 c c
Color	Pale milky, cloudy	Clear, light amber
Reaction	Neutral	Acid
Urea	0 05 per cent	1 05 per cent
Albumin	Well marked quantity	Small amount
Microscopic	Pus scattered cells and in large clumps or masses Few red blood cells	Few flat cells and an occasional leucocyte

No bacteriologic examination was made

The examination demonstrated conclusively that the disease was located in the kidney and in the right one alone, the left kidney was secreting practically normal, healthy urine notwithstanding the fact that the pain had always been referred to the left side The character of the fluid obtained from the right side, thin, purulent, albuminous, neutral, 0 05 per cent urea, showed that the secreting portion of the kidneys must be almost entirely destroyed with little else than a pyocystic condition remaining

Upon the results of this examination Dr Frank removed the right kidney March 19, 1898 He found the kidney practically destroyed, nothing but a multiple, cystic, purulent, tuberculous mass remaining The ureter was much thickened and dilated The patient recovered This case illustrates a very important point which has been observed before, namely, the pain is not always referred to the diseased side This patient never complained of pain in the right kidney, the diseased one, but always in the left kidney, the apparently healthy one

Case 4 —Mr S, age 30 years, decorator, good family history, never seriously ill and no sequelæ to the usual diseases of childhood States he had a serious and continuous hematuria eight years ago, which persisted for eighteen months, then ceased Four years ago he had a severe fall on the walk, but noticed no trouble from it Two years since he again noticed the hematuria for which he consulted an eminent specialist who made a cystoscopic examination, thought he saw a papilloma of the bladder and advised exploration The patient drifted away and after two years consulted Dr Whitfield who referred him to Dr L L McArthur for diagnosis

Examination revealed a somewhat anemic condition of a young man of good physical development without a subjective complaint. Blood examination showed lowered blood count, relative proportion normal No plasmodium The urine was constantly bloody, although the amount of blood present varied somewhat from time to time It was always intimately mixed and unaccompanied by clots of any dimension The amount of urine in twenty four hours was 54℥, sp gr 1020, and albumin, no sugar, no pus Microscopic examination showed no elements except the blood and an occasional blood cast.

Through the kindness of Dr McArthur, I had an opportunity to use my instrument on the patient The result was most satisfactory and very striking The urine from the right kidney was perfectly clear, and normal in every respect while that from the left kidney contained all of the blood, demonstrating absolutely the left kidney as the source of the hematuria

These four cases are by no means all that have been examined as I have made now some forty examinations Each of the four cases mentioned, however, illustrates some particular point and taken together they demonstrate the wide range of applicability of the instrument

Case 4 is an absolute demonstration of the completeness and perfectness of the septum or watershed formed in the bladder A more beautiful demonstration could scarcely be imagined, in one vial the red, bloody urine, while in the other perfectly clear, normal urine

Case 2 demonstrates the fact that clear normal urine can be obtained from the kidney notwithstanding the presence of a purulent cystitis

In Case 3 the use of the instrument led at once to a correct localization of the disease and the side involved, when the symptoms all pointed to the opposite side as the one probably diseased This much for the clinical aspect of the subject Concerning the mechanical use of the instrument it may be said that this is not difficult A few simple rules that have been sufficiently detailed elsewhere are all that are necessary to follow Most of these are such as would naturally suggest themselves to any intelligent physician attempting to use such an instrument Some may appear trivial but all of them have been found by actual experience to be necessary in order to guard against a possible error or to facilitate the use of the instrument By following these simple rules I feel certain the results will be most gratifying and the necessity of laying both kidneys free on the back to determine the presence and extent of disease in them as recently recommended by Edebohls (*Annals of Surg*, 1898, xxvii, 425) will no longer exist

DISCUSSION

Dr McArthur of Chicago—I have used this instrument and bear willing testimony to the excellent results Very few of us who have attempted ureteral catheterization have done so without experiencing great difficulty, but it is now easy to obtain the urine in two separate bottles, and I have been charmed with the result. Take the case of a man who has passed bloody urine for years without any symptoms clinically or any evidence microscopically of a disease, and you have a case that will at first puzzle you In such a case, to have two bottles of urine side by side will convince you that the blood is coming from above, and that the trouble is in the kidneys In the same way an enormous tumor of the right side, which needs to be diagnosed from a cyst of the gall bladder or a cystic kidney of the right side, will be proven—although previous examination of the urine has shown nothing of interest—to be a cystic kidney, and not a cyst of the gall bladder, by the total absence of any urine from that side An incision can be made and the diagnosis confirmed

INJURY TO PERIPHERAL NERVES AND THEIR SURGICAL TREATMENT

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BY A H LEVINGS, M D
MILWAUKEE

It may be stated without fear of successful contradiction that the subject of injury to peripheral nerves is one which has not received any very extensive consideration from surgeons It is indeed true that the frequency of nerve injury is not great when compared with injury to bone, muscle, artery or vein, but when such an injury does occur, especially if to a principal nerve, the importance of the injury is unquestioned. If a motor nerve be divided, its function throughout the area of its distribution is at once arrested, and this loss of function, excepting some slight restoration which may come from anastomosing branches, remains until the continuity of the nerve fibers has been re established

The opinion almost universally held by pathologists and surgeons is that certain characteristic changes occur in a peripheral nerve after division, these changes being more pronounced in the terminal than in the central portion of the divided nerve. The changes consist in the breaking up of the medullary sheath into fat drops, and their absorption with a disappearance of the axis cylinder, the neurilemma sheaths alone remaining It is also generally accepted that following the section of a nerve, if it be properly sutured, regeneration commences in the central end by a splitting up and growth of the axis cylinders which are projected to and through the neurilemma sheaths to the very peripheral portion of the nerve, following this medullary sheaths are formed around the axis cylinders Some hold that regeneration is effected through the nuclei of the neurilemma

It was for the purpose of determining, as far as possible the extent of nerve degeneration after section, and the manner of the regenerative changes, as well as the best method of surgical procedure in divided nerves, that I undertook a large number of experiments upon the sciatic nerve of different animals Eighty-five sections of the sciatic were made, and seventy specimens were taken and examined, both macroscopically and microscopically So far as my experimental work goes it seems to demonstrate that the presence or absence of degenerative changes in a divided nerve depends very largely upon the treatment instituted, and also, to some extent, upon the state of health of the animal operated upon

If a divided nerve be immediately sutured, or if a gap caused by resection be immediately bridged with some suitable material, and the work be done aseptically and properly, but slight degenerative changes will take place either in the distal or proximal portion of the nerve, and the nerve's function will, in the great majority of cases, be quickly re established

On the other hand, if the nerve ends be not approximated, if an interval caused by resection be not bridged, or if suppuration occur in the wound, then pronounced degenerative changes will occur in the nerve, more especially in the terminal portion, and a restoration of func[illegible] will no[illegible]cur In opposition to the oft-repe[illegible] nerve will first degen[illegible] extent, and be tion will take place through a branching and shooting of the axis cylinders before function can be restored," stands the clinical fact so often observed, that after section of a nerve and immediate suture, function, both motor and sensory, has been established in a few hours or days, confessedly too soon for the complicated process of degeneration to have occurred

Neither in analogy nor in physiology am I aware that there is anything which would bear out such a statement It is supposed by Howell and Huber that in the normal nerve fiber the nutrition of each internode is directly controlled by the internodal nucleus, and that the metabolic activity of the nucleus in turn is influenced by trophic impulses received through the axis cylinder from the nerve centers When the flow of these impulses is interrupted, the metabolisms of the nucleus and its dependent structures, myelin and internodal protoplasm, are altered, and the degenerative changes in the myelin and axis cylinders take place After division of a nerve, anything which connects the two ends, whether it be by immediate suture or by filling up a gap between the separated ends with some suitable material, seems to render possible the continuance of these trophic impulses to the peripheral portion of the nerve, thereby sustaining metabolic activity, preventing degenerative changes and favoring repair and the early restoration of function

An examination of my specimens convinces me that the neurilemma with its nuclei plays an important part in the restoration of a divided nerve If a longitudinal section of a nerve be examined shortly after function has been restored, one will find at some distance from the place of union the nerve fiber in a normal condition As one approaches the line of union the nerve fibers grow smaller, thinner and fewer, and when at the line of junction there will be seen a leasch of fine neurilemma strands crossing the field and coming from both directions Some of the fibers have a medullary sheath, while the major part have none Both the central and distal portions of the nerve seem to take an active part in the projection of the neurilemma threads across the line of section

Essentials to a successful operation — 1, absolute asepsis, for without this we cannot hope to succeed, 2, the nerve should not be separated from its connective tissue surroundings, 3, the nerve ends should be approximated squarely and evenly and without tension, 4, if an inch or more of the continuity of a nerve be lost the gap should be bridged with some material having longitudinal strands or fibers, 5, contrary to the common belief absolute rest of the limb is not an essential to success The methods of operating may be divided into immediate suture, bridging a gap and secondary suture A divided nerve should be united at the earliest possible moment, as this will lessen degenerative changes and will favor the early restoration of function Where there has been a simple section of the nerve, or a resection of less than an inch, the nerve ends may be approximated by slight stretching and held by two sutures placed at right angles to each other the nerve ends should be allowed to just touch each other If the stitches are drawn tighter than this, the nerve fibers will be bent at a considerable angle near the ends, and the restoration of function will be much hindered

Restoration of function —In nine resections of the sciatic of less than an inch, and in thirteen sections with immediate suture function was restored in one case in five days, in one in nine, in two in ten, and in one each in thirteen, seventeen and twenty six days respectively Three of the animals died and of the remainder function was imperfect at the end of thirty days The results in a few are not stated The success of the operation depends very much upon the technique, and in dogs upon their condition Operations done upon unhealthy dogs, or during the summer when they may be pestered with flies or fleas, give poor results

Filling a gap —In cases where an inch or more of the continuity of the nerve has been lost, one of several methods may be resorted to for the purpose of supplying the deficiency The nerve may often be stretched sufficiently to approximate its ends Forcible stretching of a nerve in order to approximate its ends has not, in my experience, been productive of good results, and I do not believe it is desirable Forcible stretching produces degeneration and favors paralysis Splitting of one or both ends of the nerve and turning a flap or flaps, has been and is practiced This method does great injury to the nerve and has nothing to recommend it The flap does not remain as a vitalized part of the nerve, but simply acts as a bridge through which the nerve fiber must grow, and the bridge is badly situated for the purpose The flap method was practiced three times in my experiments, in one case some slight restoration of function made its appearance upon the fifteenth day There had been in this case resection of one inch of nerve The other two experiments were failures

Bridging the gap with a piece of nerve taken from another animal is an excellent method, and has but one objection, the technique is complicated, requiring an animal and two operations instead of one In a dog, after resection of one inch of the sciatic, I introduced a like piece of the sciatic from a rabbit After fifty days there was no return of function, but of course this single experiment proves nothing In three instances I brought the ends of the resected nerve inside of a piece of decalcified bone, running threads from one end of the nerve to the other The results in these experiments were not as successful as by some other methods

Bridging the gap with silk threads —Auger, Assaky and Glück had used this method for bridging gaps in tendons, and Assaky applied it to bridge defects in nerves, using catgut Abundant experience has shown that when a portion of nerve up to three inches has been resected and the gap filled with some suitable material having longitudinal fibers or strands, and thus indirectly connecting the nerve ends, this bridge will act as a scaffolding through and upon which nerve fibers will be projected, filling the gap and re establishing the nerve function Experience has shown that silk strands, preferably six in number, stretched from one end of the nerve to the other, act as such a scaffolding and fulfill the indication extremely well Seven experiments were made with the silk bridge, having resected from one to two and one-half inches of the nerve In one case function was restored in twelve days, in others in twenty-one, twenty-two, twenty-five and forty-six days, respectively, one animal escaped, and of one there is no record

Bridging the gap with muscle — While making these experiments it occurred to me that a piece of the adjacent muscle might be used to advantage to fill the gap, as it was always at hand, was porous, and had longitudinal fibers, and having the additional advantage of affording a vitalized bridge Thirty-eight experiments were made with a bridge of muscle In my earlier experiments the small piece of muscle was detached entire with its fascia In the latter experiments, the piece was detached only at the ends, leaving it connected in the middle and thus insuring the continuance of its vitality, and giving more uniform and better results In these experiments the extent of nerve resected varied from one to three inches In two cases function was restored in 10 days, and in others in 12, 17, 22, 26, 28, 29, 30, 31, 35, 40, 42, 50, 51, 52, 75, 90 days, respectively Some of these operations were secondary In one case, after resection and prevention of union, the bulbs were after a few weeks resected and a three-inch piece of muscle introduced Function was restored in forty-two days

I am able to report the following case in which a secondary operation was done and pieces of muscle were used to bridge the gaps Mr J B, aged 46, consulted me in January last on account of an injury which he had received in 1869 by falling upon a sharp scythe and cutting the ulna and median nerves in his right wrist In the closing of the wound no attempt was made to unite the nerves, and there occurred at once complete loss of sensation in the area and paralysis of the muscles supplied by these nerves beyond the site of division At the time the patient presented himself to me there was partial restoration of sensation in the hand, but paralysis was still complete with great muscular wasting On February 5 I cut down upon the nerves and resected the bulbs In the case of the median these were indirectly connected by a band of connective tissue There was absolutely no connection between the bulbs on the ulnar There was a gap of more than an inch in the ulnar and of three inches in the median These gaps were bridged with pieces of muscle taken from the superficial flexors After the operation there was absolute loss of sensation in the hand In six weeks sensation was fairly well restored excepting in the terminal phalanges, and now after four months, sensation is almost normal Muscular function has not up to the present time been much improved, although there is a seeming gain, especially in size and control of the muscles of the little finger, and to some very slight extent, also, in the thumb

I would submit the following conclusions

1 That immediate suture, or immediately filling a gap after resection, prevents marked degenerative changes in a nerve

2 In gaps of one inch or more it is preferable to put in a bridge rather than approximate the nerve ends by stretching

3 That the new nerve fibers are formed by the nuclei of the neurilemma, and that both the terminal and the central ends take a prominent part

4 That the operation, to succeed, must be done aseptically

5 That in approximating the nerve ends, or putting in a bridge, the sutures must only allow the abutting ends to touch

6 That for the purpose of filling a gap there is no material in use at the present time which compares with muscle

DISCUSSION

Dr **Charles A Powers** of Denver—I would like to relate a case which occurred in my own practice, of a somewhat similar nature It was the result of a railroad accident causing a laceration of the external popliteal nerve The wound was cleaned out and in six weeks I united the ends of the nerve by bridging with a piece from the sciatic nerve of a dog Before uniting the ends were about four inches apart. I used fine black silk thread, passing it merely through the sheath of the nerve, simply allowing the cut ends to come in contact, and the wound healed by first intention Sensation began to return on the sixth day and was complete in four weeks, but function has never returned As to the choice of material to employ in bridging a nerve, I think, perhaps nerve tissue itself is as good as anything Dr Levings seems to have gotten excellent results from muscle tissue, but both are easy to get

Dr **R. H Reed** of Rock Springs, Mont.—The question is one of great interest to all of us, as we are constantly coming in contact with emergency work of this kind and it is necessary for us to give our patients the best possible results If the function of the nerve is destroyed and the ends can not be brought together, the distance being so great that bridging would be of considerable length, it is often necessary to find some other method of restoration It has been shown that the proximal end of the nerve is the one where regeneration commences, which is modified by the amount of nutrition at the distal end By using neural infixation in the way I illustrate on the blackboard, the function of the injured nerve is readily restored Galbraith first demonstrated this in a case of injury to the musculo spiral nerve, and I have secured very good results in a number of cases where I have employed it, motion and sensation being restored As to the time being several months before regeneration takes place, this is a mistake, as in several cases in which infixation has been employed, the function of the nerve has been restored in ten days I have seen it show itself in five days, and in thirty days the use of the arm has been complete

Dr **Levings**, in closing—As to Dr Powers' case, in which sensation was restored but not function, this is often the case and has occurred in my own practice, I believe, owing to an anastomosis of collateral branches Concerning the material to be used, I believe silk is the best. I have employed catgut, but it fails As to the bridging of a nerve, there is nothing that can be said against it except that it requires an animal and two operations The nerve does not retain its vitality as a nerve, but simply as a scaffolding It used to be thought the two ends of the nerve were healed and the integrity of the axis cylinder retained, but this is incorrect I seldom make a bridge of more than three or four inches in length Dr Reed's method is one that is well recognized and it is all right where it can be accomplished, but the nerves are often widely separated In a case where the ulna and median have been divided, you only have the radial left, so that the method could not be employed under such circumstances

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SURGICAL TREATMENT OF PERITONEAL TURERCULOSIS

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual meeting of the American Medical Association, held at Denver Colo, June 7-10, 1898

BY BYRON B DAVIS, M.D
OMAHA NEB

With one exception the recent writers I have consulted are in full accord in the assertion that laparotomy is a potential factor in the cure of peritoneal tuberculosis Curtis (Twentieth Century Practice, Vol viii), says that he is of the opinion that the disease is not so fatal after all has been supposed, and that many of the cases of recovery after laparotomy are instances of spontaneous involution On the other hand, from Koenig, who in 1884, first brought this mode of treatment forward and proposed it as a formal measure, reporting three cases cured, to the latest writer on the subject, most of those who have had experience with the method have been in accord in asserting its value The early dissenters from Koenig's doctrine were men who had not tried the treatment A few trials usually convinced the most skeptical The percentage of cases cured by laparotomy is variously stated at [illegible] 35 to 80 per cent The fc [illegible] proba [illegible] and the lat too [illegible] ely [illegible] ve be-very little account taken of the stage of the disease at which operative interference was undertaken, or of the organs, other than the peritoneum, involved

Though in the majority of instances simple incision through the abdominal wall has been sufficient to produce the desired result, there are frequent cases in which more than this must be done if the best results are to follow. If, for instance, tuberculosis of the tubes or ovaries antedates the peritoneal infection, permanent cure following simple abdominal incision could not be counted upon with any degree of certainty Temporarily the desired object might be obtained, but with a tube or ovary centrally diseased, a second infection of the peritoneum would be imminent In such a case the operator serves his patient best if he removes the tube and ovary in order to guard the peritoneum against a reinfection In the same way, if a tuberculosis of the intestines, of the appendix or of the mesenteric glands is the source of the peritoneal infection, and the disease at the original focus is still active, to expect permanent immunity—the primary focus being untouched—would be scarcely reasonable The omission of the removal of the primary focus of the disease is undoubtedly frequent, and it is also believed that late relapses—really new infections from the original source—are much more numerous than is generally supposed The late relapse is a proof of the incompleteness of the operation

An operation may be incomplete because the operator fails to recognize the primary focus of the disease, because such focus cannot be removed without too great risk to the life of the patient, or because the operator fails to recognize the menace of a second infection So important do I consider this, that it is my practice, when not readily apparent, to make a careful search among the abdominal viscera when operating for this disease, in order to find and remove everything which seems suspicious or threatening The only contra-indication to the removal of the primary focus is when it cannot be done without too great risk to the immediate life of the patient The question of how extensively to remove the diseased tissue must be decided on the merits of each individual case In deciding how much the patient can safely endure, the surgical judgment of the experienced operator will seldom lead him astray If no primary focus of disease is found, we are to conclude that it is so slight that it has been overlooked, that the disease originated from a distant part of the body, that it is of the so-called hematogenous type of infection, or that the primary source of infection has undergone spontaneous involution

Shall we irrigate or not irrigate? The question of irrigation may safely be left to the taste, choice or habit of the operator Unless there is found in an individual case a special reason for irrigation, as broken down caseous masses, pus or flocculent serum, nothing is to be gained by the use of irrigation In 308 cases collected by Aldibert the most favorable results were found among those in which the abdomen was merely opened Perhaps a tendency to irrigate the worst cases, and to omit the measure in the less severe, will account for this discrepancy

Shall drainage be used or primary suture be employed? For reasons which I hope to make plain when speaking of the manner in which the cure is produced, it is my opinion that drainage is a real detriment to cure, and that where it is safe to omit drainage and close the wound at once the best results will be secured

The question of the breaking up of adhesions is also one to which it is not best to attach any hard and fast rules If old and firm and extensive, little will be gained and much risk will be run, if one is too diligent in this direction The fact that new adhesions will almost immediately form, that the integrity of the bowel is likely to be compromised, and the additional shock which too much energy in this direction entails all speak for conservatism in dealing with adhesions The curative ratio is fully as high, as far as it has been possible to ascertain the results, where dense adhesions have been allowed to remain On the other hand, if any adhesions threaten to produce intestinal obstruction by causing angulation or constriction, if they are new and easily separated, or if they prevent access to a supposed primary focus which it is desired to remove, they should be carefully separated

Why does the performance of abdominal section cure these cases? This question is approached with a great deal of hesitation That it does cure is abundantly proven by hundreds of recorded cases A recent experience in two cases, in which I had the privilege of doing secondary laparotomy for other purposes, and in which I found perfect cure of the peritoneal tuberculosis, has brought this subject before me with renewed interest A variety of ingenious theories have been brought forward, most of them entirely unsatisfactory, a few which look reasonable In order to study the phenomenon advantageously it may be well to consider the histological changes which occur in the tubercle during the process of healing Recall for a moment the histological elements of the tubercle First, there is an accumulation of round cells (lymphocytes) about the group of vessels at the point of infection, next, some of the round cells in the center of this mass are transformed into epithelioid cells rich in protoplasm, multiplication and growth of same one or two giant cells formed by nuclear proliferation of epithelioid cells, the next step is the formation of the connective tissue framework, tubercle bacilli are also present In the young tubercle the round cells predominate, then the epithelioid cells gain the ascendency, these last slowly enlarging by the swelling of their protoplasm In the completed tubercle the connective tissue takes a concentric form at the periphery, it is sometimes very delicate, scarcely perceptible, sometimes strongly developed, forming a sort of capsule for the tubercle, and is endowed with fibro blasts In the center of the tubercle the connective tissue forms a very delicate stroma Only very seldom is the central framework strongly pronounced, and in old tubercles it is scarcely *perceptible between the closely* packed epithelioid cells Later in the history of the tubercles caseation occurs in the center, and then the connective tissue framework at the center disappears Gatti of Turin, to whom I am indebted for much of the material used in the preparation of this paper, has carefully studied the development and decadence of the tubercle, and divides its life into three stages

1 The fibrous stage, which includes histologically the miliary tubercle, the diffuse and the first beginning of the nodular form

2 The mixed fibrous and caseous stage (præcaseous), which makes the transformation from the fibrous to the caseous tubercle

3 The caseous stage, after this transformation has been completed

Having in mind now the specific elements of the developed tubercle, an effort will be made to trace its involution after a curative laparotomy It is to be noted that it has been proven by Gatti's numerous experiments upon guinea pigs, rabbits and dogs, that if the operation is performed before the fibrous tubercle has reached its full development it is without effect

To Osler seems to be due the credit of making the first histologic study of the process of healing after an abdominal incision He found fibrous tissue holding in its meshes a few giant cells and isolated tubercle bacilli

Pichini made a microscopic study of peritoneal tissue from a cured case, and concluded that after operation the tubercle underwent a connective tissue transformation

Riva also found a growth of connective tissue, but observed that the process of transformation instead of advancing from the periphery toward the center, had its beginning in the center of the tubercle

Kischewsky, who was the first to experiment with the lower animals, concluded that the disappearance of the tubercle was due to leucocytic infiltration, followed by an active development of connective tissue Up to this time, 1894, observers had been in accord in the belief that healing of the peritoneal tubercle is due to a fibrous transformation of the cellular elements to sclerosis The most noteworthy work in opposition to this teaching is that of Gatti, of Turin, who in March, 1894, and again in March, 1896, reported the results of carefully conducted experiments upon animals The abdominal sections were made at all stages, from a few days to many months after the inoculation The tubercles, in process of healing, were examined at every stage from twenty-four hours after the operation until complete repair had occurred A brief abstract of Gatti's findings will be of interest During the first week after the operation an amount of reddish serous fluid exudes into the free peritoneal cavity and gradually diminishes in quantity from the first to the seventh day The first to third days showed the peritoneum slightly reddened, the third to seventh days showed the tuberculous tissue slightly increased in volume The vascular congestion was very slight and restricted to the periphery of the tubercles and to the normal peritoneum between them The connective tissue showed no changes, its cellular elements being in the same ratio as before, and above all there was no proliferation of the fibro-blasts The round cells were neither more numerous nor changed in appearance The epithelioid cells appeared unchanged and the phagocytosis was no greater than before - Twelve days after the operation beginning hydropic degeneration of the epitheloid cells was observed, drops and rings of fluid occurring in the cells The entire protoplasm was here and there changed into a fluid containing the floating nucleus No increase of the fibro-blasts was present The tubercle bacilli were somewhat more numerous, phagocytosis was not increased Gatti further asserts that connective tissue proliferation after laparotomy seldom occurs, and only to a limited extent, and that it is not occasioned by the operation "In general," he says, "it may be absolutely observed that the increase of the stroma goes hand in hand with the development of the tubercle If the tubercle is really influenced by the laparotomy, and the specific irritation which has occasioned the development of the epitheloid, lymphoid, endothelial and connective tissue cells is arrested or diminished, so is the further growth of all these kinds of cells at the same time checked "

Continuing the description of the involution of the tubercle Gatti shows that, as the epitheloid cells degenerate and the fluid is absorbed, vacuoles are formed and the surrounding zone of connective tissue simply presses in to fill the space occupied by the vacuoles Where the tubercles were already rich in connective tissue before the operation, this will be present in tolerable abundance in advanced healing, but it is only the connective tissue already existing before the process of repair began

By the time the epithelioid cells have undergone hydropic degeneration all tubercle bacilli have disappeared from the tubercle The reparative stages in the caseous tubercle are much the same except that the caseous masses are not absorbed, they being merely surrounded by connective tissue capsules Cure by operation in this stage is less sure than before caseation has occurred But even when healing does not follow, the development of the disease is usually slowed or completely checked

The conclusion is reached that healing is not brought about by connective tissue growth, and that this error was made by the examination of cases that had fully healed Connective tissue masses were found and the conclusion formed that healing occured by pressure upon the specific elements of the tubercle by proliferating connective tissue Only by examining animals at all stages after the operation can the process of healing be correctly studied

Mazzoni asserts that the healing process consists partly of increase of connective tissue and partly of a cystic degeneration This cystic degeneration doubtless corresponds to Gatti's vacuolization due to hydropic degeneration of the epithelioid cells

I would suggest that it is probable that tubercles can heal by either of the processes given depending upon what force is acting, to produce disappearance of the tubercle If the process is set up by causes extrinsic to the tubercle itself, as by an improvement of the nutrition of the patient, causing greater powers of resistance to the inroads of the disease, in other words, if the protective power of nature to [illegible] against danger asserts itself, as occurs in spontaneous healing, the histologic process is probably [illegible]tive tissue proliferation, with pressure upon [illegible]tral specific elements of the tubercle caus[illegible] degeneration and absorption

If, on the other hand, the force at work [illegible] something that destroys the activity of [illegible] bacilli, the process would probably be [illegible] of the epithelioid cells, the consequent [illegible] vacuoles, and the collapse of the [illegible] A moment can now be profitably [illegible] upon the force at work which [illegible]ing of a peritoneal tuberculosis [illegible] incision Many theories have [illegible] time does not permit even [illegible]

Nannotti and Baciocchi [illegible] sets up an inflammatory [illegible] accompanied by a noteworthy [illegible]ing power phagocytosis [illegible] elements, connective [illegible] of the [illegible] transformation

Stchegoleff attributes the curative effect of a laparotomy to a combination of traumatism of the peritoneum, thermic influence, penetration of air into the abdominal cavity, and perhaps the action of light, causing irritation followed by an inflammatory deposit

R T Morris of New York concludes from experiments, that recovery after operation occurs because putrefactive bacteria produce a toxalbumen in the peritoneal fluid which is fatal to tubercle bacilli in the peritoneum The reason it is more effective in tuberculosis of the peritoneum than in the knee-joint and elsewhere is because of the exceeding abundance of the lymphatics in the peritoneum, bringing toxic agents, which are absorbed, into close contact with the bacilli

The theory formulated by Gatti is that the serum of the blood of a person suffering from peritoneal tuberculosis is a true antitoxin The serum which pours into the peritoneal cavity after laparotomy comes into close contact for several days with the tubercles, destroys or inhibits the tubercle bacilli and thus is set up the chain of events which leads to complete healing

If Gatti's description of the process of involution of the tubercle is the correct one, his theory seems the more reasonable How much antitoxic power the serum of the blood of a person suffering with tuberculosis possesses I am not in a position to determine Granted that it does possess potent antitoxic powers, its presence in the peritoneal cavity and its absorption by the lymphatics bringing it into intimate contact with the tubercle bacilli, would seem to explain very fully the curative effects of laparotomy

The fact that cure does not occur if the laparotomy is done very early, before the completed fibrous tubercles have formed, Gatti attempts to explain by the fact that in the formative stage the tubercle bacilli are more resistant than they are later I would suggest that it can very reasonably be supposed to be due to the fact that up to that time the antitoxic serum has not yet attained sufficient potency to be effective

The fact that, in cases in which drainage is used the results are less favorable, is understood, if the cure is due to an antitoxin, for, with drainage, the antitoxin is drained away instead of being absorbed by the lymphatics of the peritoneum The increased amount of serum thrown into the peritoneal cavity, with the greatly stimulated powers of absorption which a laparotomy produces, would cause a very large quantity of antitoxin to be brought rapidly into intimate relationship with the tubercle bacilli, causing their destruction

In conclusion, although I do not for a moment claim that Gatti's hypothesis has been proven, it has been brought forward because it seems rational, and because it does not seem as if his work has received the recognition it deserves

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TREATMENT OF PURULENT TUBERCULAR PERITONITIS BY INCISION, WITH AN ILLUSTRATIVE CASE

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association held at Denver, Colo June 7-10 1898

BY ROBERT REYBURN, A M, M D

WASHINGTON D C

Modern aseptic surgery has of late years achieved many magnificent results, but in no field have these successes been so striking and wonderful as in that of abdominal surgery

Among the later and by no means the least important of the triumphs of abdominal surgery, is the treatment of purulent tubercular peritonitis by free incision into the abdominal cavity, with thorough evacuation of all pus or septic material Tubercular peritonitis we believe to be always a secondary infection from the tubercular bacillus, which has obtained entrance into the system, either through the digestive or respiratory organs The following case, which recently came under the observation of the writer, is herewith given

Was called in consultation with Dr Wilder on Feb 28, 1898, to see E S K, mulatto, aged about 14 years He was fairly well nourished and weighed about 110 pounds He gave a history of exposure to inclement weather some ten days before I saw him, which was followed by symptoms of peritonitis For four or five days he had suffered from irregular hectic fever, temperature ranging from 100 degrees to 102 degrees On examination his abdomen was found enormously swollen, tense, and dull on percussion, and evidently filled with a large amount of purulent material Operation by incision was advised and somewhat reluctantly acceded to March 2, 1898, an incision one and a half inches in length was made one inch below and two inches to the right of umbilicus Over a gallon of offensive, purulent material was thus removed from the cavity of the abdomen, and by means of an ordinary fountain syringe sterilized warm water was injected into the abdominal cavity, until it ran away again clear and without odor A perforated rubber drainage tube was inserted in the wound The patient experienced almost immediate relief from the operation The abdominal cavity was washed out every twenty four hours with sterilized warm water containing a little boric acid After a few days this was done every forty eight hours His recovery was rapid and complete His temperature in a few days fell to normal, and in three weeks he had entirely recovered

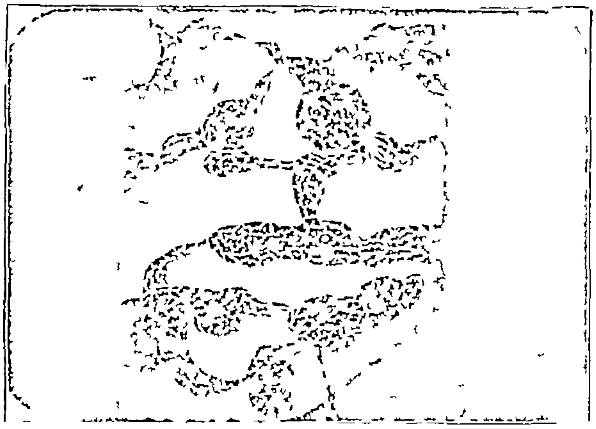
He was carefully examined previous to the operation, and the only evidence he presented of tuberculosis was a limited dullness over the posterior surfaces of the apices of both lungs, with slight dullness on percussion and slight crackling on auscultation over the affected area After he was convalescent, he was placed on cod liver oil and syrup of the iodid of iron, and I am informed that he is now (five months after the operation) in excellent health

As has been well said by M Watson Cheyne in his address delivered before the Section of Pathology, British Medical Association, at Montreal September 1, 1897, tuberculosis, in the varying methods in which it attacks different portions of the body, presents some puzzling phenomena As we all know, tuberculosis (the white death) in its various forms, causes about one-seventh of the entire number of deaths that occur annually from all diseases Yet how varying is the progress and fatality of tuberculosis when it occurs superficially upon the skin as in lupus, when it occurs in the cervical glands, when it occurs in the lungs in the form we too well know as phthisis pulmonalis, or when it attacks the serous membranes of the abdomen and causes the disease known as tubercular peritonitis

The life history of the bacillus tuberculosis as it is found in cases of lupus of the skin, would seem to indicate that it is not as virulent as many other pathogenic organisms Cases of lupus are slow in progress, often exist for many years, and frequently only cause death when the patient's lungs become infected with the bacillus, thus causing phthisis pulmonalis Why does this slow progress and fatality exist in lupus when contrasted with the acute and rapid infection of the system that we find in acute phthisis, or as it is often called, galloping consumption?

We believe that the true explanation of this is the nature of the tissues involved When these bacilli infect the skin, the irritation produced by them produces a layer of tissues around the bacilli through which they are often unable to pass, and the system is this way protected from their inroads The same phenomena are often seen in postmortem examinations, on examining the lungs of persons who have died from other diseases than pulmonary consumption In fact it has been conclusively shown that the vast majority of all persons, who die from any cause, after the age of 60 years, at some period or other of their lives have had deposits of tubercle in in their lungs These deposits of tubercle in the lungs often become surrounded or encapsulated by fibrous tissue, or may undergo calcareous degeneration and remain dormant during the lifetime of the individual Unfortunately, however, this is not the usual history of tuberculosis of the lungs The final destructive series of changes occurring in the lungs in phthisis pulmonalis, are due, not so much to the destruction caused by the bacillus tuberculosis, as to the infection of the system caused by the development and growth of myriads of pus-producing organisms, which attack the pulmonary tissues already weakened by the inroads of the tubercle bacilli

The hectic fever with the debilitating sweats which accompany the later stages of phthisis pulmonalis, is evidently a septic infection by pus organisms Tubercular infection of the peritoneum, however, in its rapidity of progress presents a marked contrast to most other forms of tuberculosis As much damage may be done to the organism in a few days during the course of a case of tubercular infection of the peritoneum, as may be done in months or even years by other forms of tubercular disease Why is this? The explanation of this is easily given by taking a look at the illustration accompanying this article, which is copied from J Burdon Sanderson's Hand-Book for the Physiological Laboratory The peritoneum, in fact in man and all higher animals, contains an immense mass of lymphatic glands and vessels, which probably comprise nearly one-half its area


Lymphatic glands of peritoneum (rabbit)

Absorption then from a structure of this composition goes on with immense rapidity, and putrid material of whatever kind, when it reaches the peritoneum, soon accomplishes its deadly work Every physician knows how rapidly patients sink and die from the deadly peritonitis which follows perforation of the intestine in typhoid fever Cases of abdominal surgery also where blood or serous exudation have escaped into the cavity of the peritoneum, and have not been removed at the time of the operation, rapidly prove fatal from the same cause

The treatment of purulent tubercular peritonitis by incision, either with or without drainage, is now thoroughly established by the record of such a large number of successful cases, that it is almost universally admitted by surgeons to be the proper procedure An interesting query arises, how does the simple operation of incision cure? Many explanations of this have been given, some have believed that the entrance of air during the operation carried in at the same time other micro-organisms, which waged war upon and destroyed, by the formation of toxins, the tubercle bacilli Other fanciful explanations have been given, which it is needless to repeat, but the true explanation is believed by the writer to be simply the bactericidal power of the lymph and blood serum which continually bedews the surfaces of the peritoneum

As soon as the purulent material is evacuated from the abdominal cavity by drainage and thorough washing with sterilized water, the number of tubercular and other pathogenic bacilli present on the surface of the peritoneum, is reduced to a minimum Nuttall has shown that the blood serum powerfully attacks and destroys all pathogenic bacteria and other harmful micro-organisms with which it comes in contact, and the living organisms become the victor in the fight, provided that the number of the invading micro-organisms is not too great The battle between the hostile micro organisms and the blood is just like that between two opposing armies If the host of micro organisms is not too numerous, the blood by the bactericidal power of its serum, vanquishes, and the result is the restoration to health, but if the powers of the system be weakened by any cause, or the number and virulence of the invaders are too great to be overcome, the pathogenic micro-organisms become victorious and the result is death

SOCIETY PROCEEDINGS

Michigan State Board of Health Quadri-Centennial and Conference of State and Provincial Boards of Health of North America

Held at Detroit, Mich , Aug 9, 10 and 11, 1898

FIRST DAY

The sessions of the first day were devoted entirely to the quadri centennial of the Michigan State Board of Health

The session was opened with prayer by Rev JOHN MCCARROL, the delegates joining in the recitation of the apostles' creed

The president of the State's health board, FRANK WELLS, then made his annual address Among other things he said

"The last quarter of the century has been notable for the development of two sciences, biology and sanitation The application of this knowledge to the saving of human life and the prevention of human suffering has kept misery and despair from entering countless homes The honor and applause which everywhere greet the warrior who is moved by patriotism and duty to noble deeds is justly due to Dewey, to Shafter, to Sampson, to Schley and to Hobson Shall we not place side by side with these worthies, to be equally remembered with gratitude the names of Pasteur, of Lister, of Koch?

Mayor MAYBURY welcomed the delegates and remarked that they had come to a city where the doctors do not live by curing diseases, but by making the healthy healthier Residents of Detroit, affirmed [illegible] on an a[illegible] from ten to fifteen pounds [illegible] than the [illegible] of other cities

Dr GIBBS [illegible]

In lauding [illegible]

that for him there was only one more removal to make, and that was from Detroit to heaven

The first paper on the program, entitled "A Quarter Century of Sanitary Work," was by A N Bell of Brooklyn, N Y, but in his absence was read by Dr Henry B Baker

This was followed by an address from Chicago's health commissioner, Arthur R Reynolds, on

PUBLIC HEALTH WORK IN MICHIGAN

His address showed how readily a naturally dry subject might be made exceeding attractive to the public A summary of his remarks is as follows What God hath wrought through this Board is told in the statement that between 1890 and 1896 nearly 150,000 cases of sickness were prevented and more than 7000 lives were saved from premature death through the advice, instructions and supervision of the Board It is not too much to say that the State Board of Health of Michigan has, in the language of our great classic in hygiene, Edmund Parkes, made growth more perfect, decay less rapid, life more vigorous, death more remote for every citizen within the boundaries of this fair State At first blush it may seem that the field of usefulness of a State board of health is a narrow one On reflection, however, we will discover that its function is as broad as civilization itself It follows the citizen in all his dealings, through all his days It begins at his birth, it has him under observation, whatever his mission, through all his life to its close, and it keeps careful vigil at his grave until the last vestige of his remains is crumbled into the dust whence it came Every incident that lowers the vitality, that depraves the mind or that whets an abnormal appetite calls for its interference It holds no despot's sway to club mankind along paths that are hard It only asks that he be normal It teaches no abstruse philosophy, but offers hope and regeneration to the weak.

In this work of sanitation there is nothing of the spectacular There is none of the inspiration and the glory that reckon with a nation saved or a foe repulsed by feats of arms Nevertheless, those who study understand that the proper appreciation of sanitary science defeats man's most relentless foes, and that neglect or defiance of her laws has brought destruction to nations in all time If unhappy Spain had no other sin than that of having maintained at our doors a preventable breeding place for yellow fever, she richly deserves the wrath that has been visited upon her The greatest number of deaths in the centers of population is caused by diseases of the nervous system, the worry diseases The number is steadily increasing year by year, and this increase is due to the keenness of commercial competition and the fierceness of the struggle, not alone for existence, but for wealth It is an almost universal rule that those who have labored and worried beyond their endurance leave a generation of weaklings to fritter away their substance and ultimately to pass from history forever The lesson to be learned and the lesson that must be learned, is to stop fretting and stewing one's self into the grave, to leave a pitiful physical and mental inheritance to one's children Natural law intends that man shall live and be useful, and not that he shall be degenerate or dependent, or that he shall prematurely die The world is for man and his upbuilding, for the developing of his mental, moral and physical stature The future sanitarian will broaden out upon this basis He must educate the masses upon the known laws of reproduction and enable human beings to improve their breeding as the farmer improves all domestic animals by proper mating

The remedy for the social evil that leaves such human wrecks in its wake must come through a thorough dissemination among the public of knowledge now chiefly held by those of the medical profession Let parents and their daughters once fully understand the jeopardy girls are placed in by marriage with men who have lived reckless and impure lives, and there will be less need for surgeons to practice their art upon women in future Let all understand that much of this danger and disease has its incentive in the semi delirium caused by intoxicating drinks When this is generally understood the young man who is known to be a rounder will not be hailed as a jolly good fellow, but as an evil thing to be shunned, as was the leper in the days of old

But neither the sanitary millennium nor the social and economic millennium, nor the millennium of peace has yet arrived Hellish war is still waged by civilized people and in the name of both God and the law, men are still legally marshalled out for slaughter Sanitary science believes in war, but its warfare does not tend either to brutalize or to destroy life, but to save it, and to elevate it. Sanitarians believe in the war that regenerates and refines, the war for the defeat of satan and the enthronement of Immanuel, a war whose weapons are reason, sweetness and light. To all who serve in such warfare in this State, and to those who have brought sanitary work to its present perfection, I offer my most respectful homage It is the Master's work, and I bid you Godspeed

SANITARY WORK TWENTY FIVE YEARS AGO

was then presented by Prof R C Kedzie, M D It was also put entertainingly

At the afternoon session papers were read on the "Educational Work of the Michigan State Board of Health," by Prof A C Lindsey, dean of Yale's medical faculty, on "Sanitary Conventions," by Benjamin Lee, M D, on "Annual Conferences of Local Health Officers," by C O Probst, M D, on "State Work for the Restriction and Prevention of Diseases," by John S Fulton, M D, and on "Municipal Restriction of Diseases," by Ernest Wende, M D, Buffalo's Health Commissioner

The evening session was occupied in five minute addresses by various prominent sanitarians, among them Felix Formento of New Orleans, Hon Le Roy Parker of Buffalo, Hon John Avery of Greenville, Mich, Peter H Bryce of Toronto, D E Salmon of Washington, J N McCormack of Bowling Green, Ky, C L Wilbur of Lansing, and J N Hurty of Indianapolis, and was followed by a reception and banquet.

Second Day

The morning session was occupied with the annual reports of the officers of the organization, presented by Benjamin Lee of Pennsylvania, president, Felix Formento of Louisiana, vice president, Eleazar Pelletier of Quebec, treasurer, and J N Hurty of Indiana, secretary

The report of the Secretary, Dr J N Hurty of Indiana, showed an increase in membership for the year of three, one from Mexico and two from Canada Secretary Hurty recommended that the conference adopt the old constitution of the national conference of boards of health, whose title was changed to the present one at the Nashville meeting last year This was done with the exception of the annual dues clause, which is left to be prorated according to expenses

The treasurer, Dr Eleazar Pelletier of Montreal, reported the reduction of debts left from the Nashville meeting of last year from $357 to $100

The conference adopted a resolution asking compilers of vital statistics in the United States, Canada and Mexico to use the Bertillon system of making mortality census returns

A by law was adopted making it mandatory that on each alternate year the conference meet in Washington, on the ground that the attendance would be greater if a regular meeting place were adopted

After these business matters had been disposed of the convention settled down to the discussion of three questions suggested by the session yesterday, viz What are the principal lines of work of your board? How is each accomplished? What modification, if any, does the experience of your State suggest?

Dr E D Crowley of Oakland, Cal, stated that the work of the State's health board is being vigorously pushed along three lines The prevention of the spread of tuberculosis, the prevention of Texas fever in cattle, carried in from outside by the tick, and lastly, sanitary control over the State's harbors In their efforts to stamp out tuberculosis in cattle, proposed legislative measures have been defeated again and again by a combine of wealthy cattle owners

Professor Lindsley of Yale University spoke for Connecticut The State Board there, he stated, had only advisory powers The law governing sanitary measures in his legislature, he said, was to follow, never to lead, while the work of enlightening the public mind on sanitary reforms was like teaching a school where there were more truants than teachers However, after twenty years' persistent work, the board is endeavoring to secure thorough sanitary administration in every town, to tabulate and publish vital statistics and have a thorough microscopic examination made of all water used for drinking and boiling purposes One system of sanitary rules prevails in every town, and a county health officer is clothed with administrative power to see to their enforcement

Delaware was represented by Dr E W Cooper, who said his State Board was clothed with absolute power on its own inspection or on notice of grievance It meets semi annually and provides for a sanitary inspection throughout the State twice a year Local boards are clothed with the same power as State boards, and education of the public along sanitary lines is carried on by means of circulars and public meetings held frequently

Dr J A Egan, who represented Illinois, drew a picture of the State's sanitary condition There is no mandatory statute enforcing the creation of local boards, and the business of the

State Board seems to be mainly the examination of doctors and midwives No State Board of examining physicians is provided for In one city of 15,000 population there is no health board, only a sanitary policeman, and disease runs rampant.

Dr J N Hurty, for Indiana, said that the work of its State Board was hampered by defective legislative mechanism Sanitary work is all crowded upon the secretary, who already has petitions from 250 towns asking him to come and investigate deplorable conditions

At noon the delegates, with their ladies and guests, took cars for Parke, Davis & Co 's laboratory, where luncheon was served After a tour of inspection, the party were transferred to a steamer in waiting and given a ride to St Clair Flats

At the evening session the conference listened to a paper by Gardner S Williams, engineer of the Detroit water works, on

PURIFICATION OF SURFACE WATER,

the opening wedge for a lengthy discussion The paper was of necessity somewhat technical, dealing with experiments made with various purifying processes in relation to sewerage and bacteria, especially the typhoid bacillus Mr Williams stated at the outset that Detroit had never gone into the matter of purifying its water to any great extent and he was therefore unable to give any extended local experiments He referred to the development of purification of water in various countries, with copious explanations of the different processes One of the points he made was that chemic analysis alone is not sufficient to show all the impurities of any certain water, but must be taken in connection with all available data concerning the source of supply, so as to establish a standard from which deductions can be made with any degree of certainty

The question of filtration came up in connection with the main topic, and Dr Hurty of Indianapolis, presented a number of stereopticon views of filtering plants, the most important of which was the sand filter in operation at Lawrence, Mass

Mr Williams did not commend the efficiency of mechanical filters, on the ground that they have not yet reached a stage of perfection rendering them thoroughly reliable, but they were championed by several physicians, who held that they not only gave satisfactory results, but were a necessity in small cities, where the first cost of the plant was the main question to be determined

Dr Bryce of Toronto, said that one of the greatest factors for good water was the keeping of water in its state of natural purity

Third Day

The Conference of State and Provincial Boards of Health closed its sessions with discussions on tuberculosis in all its phases The walls of the convention were hung with maps showing that this insidious disease has killed more people than any other Dr Hurty of Indiana said one seventh of all the deaths are caused by it. William Bailey of Kentucky declared that 1,200,000 people annually died from tuberculosis, and said that if sanitarians were but given the opportunity to fight the disease the saving would easily pay the country's pensions, that in two or three months the interruptions to commerce from the disease represented at least $100,000,000

After tracing the tubercle bacilli from its origin to the height of its growth in man the conference discussed means of prevention Discussions on this point ranged from "Care of Expectoration" to "State and Municipal Care of Consumptives"

The conference elected the following officers President, of Toronto, secretary, J N Hurty of Indianapolis, treasurer, Felix Formento of New Orleans, vice president, P H Bryce Eleazar Pelletier of Quebec

PRACTICAL NOTES

To Remove a Foreign Body from Under the Nail —Alternately soften the nail with the end of a match dipped in caustic potash and scrape with a piece of glass until the object is reached —*Journal de Méd de Paris*, July 3

Vesical Asthma—One of the manifestations of autointoxication consequent upon hypertrophied prostate, is distress in breathing, which can only be relieved by emptying the bladder *Semaine Méd* , July 6

Salt as an Antiseptic —According to the *Cronica de Ciencias Médicas de Filipinas*, the insurgents dress wounds with dry salt or strong brine, from lack of the usual antiseptics, and wounds from firearms heal under it in four to five days —*Semana Médica*

For the Disinfection of Sponges —Sponges can be boiled without injury in 30 per cent. prophylic alcohol, Saul announces in the *Munich Med Woch* of June 14 He boils them two hours the first time, afterward thirty minutes Anthrax spores are killed in ten

Jequirity in Ozena —Jequirity proved effective in a number of cases observed by Dr C Uriarte, that had resisted all-other treatment The after effects vary with the individual and are transient, never serious He uses it in a powder or salve, or in a 10 per cent solution —*Semana Méd* , June 16

Foreign Bodies in the Air Passages —Heller reports a number of serious cases in which prompt irrigation of the naso pharyngeal space produced such efforts at expectorating or coughing, that the foreign body was expelled at once and life saved He urges all to try this simple measure before resorting to tracheotomy —*Munich Med Woch* , June 28

Champhor Bromid in Chorea —Bourneville and Katz describe a severe typic case of Sydenham's chorea rapidly cured with camphor bromid, increasing from 2 to 9 grams a day, March 9 to 22, again decreasing to 2 by April 6, confirming their previous announcements of its remarkable efficacy The *Progrès Méd* , July 16, contains cuts of the handwriting, during treatment and after it had become quite normal again, the final evidence of cure

The Toxicity of Camphorated Beta Naphthol —This has been established by Le Gendre and Desesquelle, who announce that the stomach will bear quite a large amount, if diluted in an inert liquid The maximum for an adult is 1 c c a day Injected into the peritoneum the daily maximum for an adult is 5 c c It can be incorporated with cocoa butter for a suppository, maximum 35 centigrams a day The absorption is always slow, and as the camphor is most soluble, the toxic accidents that have been observed were probably due to the camphor —*Presse Méd* , June 22

Abrashanow's Method of Amputatio Femoris Intercondylica.—This method consists in sawing off the rear half of the patella, leaving the tendon still attached to the front, and after sawing off the lower end of the femur, cutting an oblong piece out of the posterior upper end of the tibia. The lower edge of this piece is then brought up to fit against the patella, while the long front edge fits the whole length across the stump of the femur All the sawed surfaces are thus brought into juxtaposition, and the natural posterior surface of the upper end of the tibia, which has no bursa, forms the stump —*Cbl f Chir* , July 2

Echinococcus of the Liver —R. Lennhoff describes some observations (*Deutsche Med Woch* , June 30) which prove that an echinococcus can be differentiated by a peculiar furrow that accompanies each deep inspiration when the patient lies on his back The abdomen rounds up smooth below the sternum except during inspiration, when the characteristic furrow between the sternum and the tumor attracts attention A test puncture confirms the diagnosis The patient should lie on his face a while before the removal of the cyst to dislodge the heavier contents from the rear

Ox gall in Biliary Lithiasis —L Gautier of Geneva has found that the prolonged administration of beef gall in small doses increases the solubility of the cholesterin and hence prevents the formation of gall stones He uses an extract reduced to one tenth, decolorized, sterilized at 104 to 105 degrees C , combined with an inert powder, to make a pill containing 10 centigrams, one pill at the two principal meals Patients formerly tormented with hepatic colic have no return of their attacks with this medication, which he continues or suspends according to indications —*Semaine Méd* , June 29

Coagulating Injections for Erectile Tumors—T Anger has been using the following solution for this purpose for thirty years, with most satisfactory results Water, 60 grams, sodium chlorid, 15 grams, and ferric chlorid, 25 grams, at 30 degrees C He injects two to twenty drops in a small angioma and twenty to forty in larger ones, proceeding very gradually and limiting the injection to the part infected by peripheric compression of the tumor, left undisturbed for fifteen minutes afterward The tumor subsides very slowly If it has not all disappeared in three to six months he repeats the injection—*Sem Méd*, July 6

Success of Artificial Serum in Lead Colic—The first indication is to purge and carry off the accumulated metal, but this is extremely difficult to accomplish, as purgatives usually refuse to act for several days Prof A Delearde now announces that he has found that one injection of artificial serum will produce a copious diarrhea at once when there is lead intoxication, although in all other conditions it affects the kidneys, not the bowels He considers it probable that the chlorid of sodium combines with the lead to form a soluble chlorid of lead, to which the prompt purging action is to be ascribed, which at once cures the pain, vomiting and headache Paralysis is not affected—*Nord Med*, July 15

Treatment of Strabismus—At the July meeting of the Paris Academy of Medicine, Dr Panas communicated some observations on this subject He said that the squinting eye was the one which deviated most from the line of vision Nevertheless strabismus was only apparently unilateral If the phenomena accompanying this condition were analyzed in detail it would be found that the strabismus was always bilateral, and if it appeared unilateral that was because the patient only used the eye which was least affected, and in overcoming the deviation of this one exaggerated the obliquity of the other As for therapeutic measures, Dr Panas held that as the affection was bilateral there must be a bilateral operation In 230 cases Dr Panas performed tenotomy of both internal recti, and stretched them in addition, thus lessening their tendency to overaction Dr Panas never performs advancement, finding a simple tenotomy sufficient In 220 cases he had never seen any overcorrection, or if there were a little it was only temporary Of 220 convergent cases of strabismus, he had 190 in which the result was immediately successful In those which were unsuccessful the result was not overcorrection but undercorrection In ten cases Dr Panas rectified this by advancement of the antagonistic muscles and in every case with success—London *Lancet*

The Laborde Treatment of Chloroform Asphyxia—Herzog of Charkow has recently published in the *Deutsche Zeitschrift für Chirurgie* some experiments made according to Dr Laborde's method (*vide* JOURNAL, Vol xxx, p 361, Feb 12, 1898) of producing resuscitation in cases of chloroform and ether asphyxia by rhythmic traction of the tongue The effect of making traction on the tongue is to stimulate its sensory nerves, and to bring about reflex contraction of the respiratory muscles through the medium of the central nervous system Dr Laborde recommends that the tongue should be seized firmly, and traction be made about twenty times in a minute Up to the present time twelve cases have been recorded in which this method proved successful in asphyxia from anesthetics For the purpose of testing Dr Laborde's conclusions, Herzog made a series of experiments on dogs partially asphyxiated by means of large doses of chloroform and ether and found that, in nineteen cases respiration was restored spontaneously in six, but that traction of the tongue was only successful in resuscitating three of the remaining thirteen In these three instances the animals began to breathe again after traction had been made twelve times, and their recovery was complete, in two other cases respiration was restored, but the cardiac action nevertheless failed, and although the respiration was kept up for sixteen and six minutes respectively the pulse did not rally and the animals died The results obtained by Herzog are thus at variance with those of Dr Laborde, who obtained resuscitation in the great majority of cases It is probable that Dr Laborde commenced to make traction of the tongue at an early stage, when the animals were still capable of recovering spontaneously The asphyxia obtained in Dr Herzog's experiments always occurred in the last stage of the narcosis Asphyxia in the early stage of the narcosis, while it is so frequent in the human subject, could not be obtained in the experiments on animals Herzog concludes that Dr Laborde's method is not reliable in the asphyxia of the last stage of narcosis, but that it may be tried as an auxiliary to other methods in the primary steps—London *Lancet*, July 9

Ureteral Surgery—A recent editorial in the London *Lancet* treats of the above subject especially on the lines indicated in the last Hunterean Lectures on "The Surgery of the Kidney," delivered by Mr Henry Morris If the recent advances in the surgery of the kidney have surprised those accustomed to the old order of things, the modern surgery of the ureter excites still more astonishment Numerous operations are now performed on the ureter, a structure which was quite recently considered to be wholly beyond the possibility of surgical interference The first, and probably the most important, operation performed was ureterotomy for calculus, and though the operation is still rare, it has been done by several surgeons, and stones have been successfully removed from all parts of the ureter, from the pelvis of the kidney to the opening into the bladder Strictures of the ureter have been relieved by ureterotomy, and in some cases a portion of the tube has been excised, with results which fully justify the operation Ureteral anastomosis and ureteral grafting have received much attention in consequence of the frequency with which the ureter is involved in the operation of vaginal hysterectomy Formerly the only hope which could be held out to a patient suffering from ureteral fistula after such an operation was nephrectomy, but ureteral anastomosis and grafting bid fair to entirely replace this severe procedure A still more extensive operation on the ureter is excision It is only called for in cases of widespread and persistent disease, but it has been successfully performed for tuberculosis and other conditions of the ureter Another subject closely allied to the above is that of obstructive anuria It is very rarely indeed that both ureters are simultaneously blocked by calculi In most cases one kidney has been destroyed or rendered functionally useless by a stone, and then later, when the other kidney has taken on the double duty, it too, has had its ureter blocked by the impaction of a renal calculus The symptoms which follow are identical with those met with after experimental ligature of both ureters in animals, and usually the symptoms which are commonly called 'uremic" are absent The patient survives a few days, perhaps as many as ten, and then dies The fatal ending is inevitable unless the obstruction is removed It has taken many years for it to be generally recognized that obstruction of the intestines can not be cured by the lavish administration of purgatives and that the obstructing cause must be removed or the bowel opened above the obstruction In the precisely analogous case of obstructive anuria, diuretics and exercise are still only too often relied on for treatment, and a patient is allowed to succumb when an operation would have saved him It is true that the percentage of spontaneous removal of the obstruction is greater in the case of the ureter than in the case of the intestine, but the principles involved are the same, and an operation should be performed as soon as the diagnosis is established The lectures were illustrated by an elaborate set of tables of operations on the kidney, which must prove of great value in the preparation of statistics on this subject.

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SATURDAY, AUGUST 20, 1898

BLASTOMYCETIC DERMATITIS

In July, 1896, Dr GILCHRIST[1] described a case of skin disease, in which he found yeast fungi or blastomycetes In March, 1898,[2] he published an extensive report of an additional case, and in the same month Dr H G WELLS[3] of Chicago, published a case from the surgical clinic and pathologic laboratory of Rush Medical College

The *Indiana Medical Journal* for August, 1898, contains a report of a case by ROBERT HESSLER of Indianapolis This concerns a thoroughly healthy man who, in October, 1897, received a slight cut while being shaved This was situated in the neck, just under the chin, and on a line with the right angle of the mouth Healing took place, but was followed by the development of an oval shaped papule as large as a half-grain of wheat This nodule was freely movable, hard and remained stationary until January 10, this year, when it was noticed that it had become larger and was surrounded by an inflamed, slightly elevated area Shortly after this it "came to a head" The surface was then cleansed, opened aseptically, culture tubes inoculated and smear preparations made

With EHRLICH's neutrophile stain there were found, in the interior of the leucocytes, characteristic yeast cells of a brownish color and slightly oval outline Many of the organisms were in the budding stage The agar tubes which were inoculated presented in a few days pure cultures in the form of small, bright, white colonies The course of formation of daughter cells by means of budding could be followed readily in hanging drop preparations When the organism was cultivated on solid media for a longer time, Dr HESSLER speaks of the appearance of characteristic fungus threads As seen in stained preparations the single organisms are slightly oval, with a clear outer envelope and with differentiated contents

Although the micro-organism is smaller than those described by GILCHRIST, Dr HESSLER has concluded that it concerns a blastomyces, and in this opinion he is confirmed by Professor WELCH of Baltimore, who has seen the cover-glass preparations

The scar that formed after opening the abscess was much greater in extent than is ordinarily the case with similar abscesses due to the common pus microbes, and of late it has been noticed that a new papule about three-fourths of an inch from the site of the first one has appeared

Now that the attention of the dermatologists and physicians in general has been called to the fact that blastomycetes may cause extensive lesions of the skin in various parts of the body, which, speaking generally, often resemble certain forms of tuberculosis of the skin, and which have therefore in some quarters been called instances of pseudo-tuberculosis, it is to be expected that many cases of this kind, which have heretofore been erroneously diagnosed, will be placed in their proper category

NEUROLOGIC NOMENCLATURE

It is a question for psychologists how far thought is possible without words, but it is a matter of common every-day experience that words are an essential in the conveyance of thought They are tools, however, of varying convenience and value, according as they are properly chosen and fitted to the idea which they are intended to convey The amount of extra labor that is involved in the expression of our thoughts by the lack of a suitable intelligible terminology is not readily calculated, but nearly every one has felt the mental strain of labored circumlocution when the proper terms were unknown or did not readily come to hand It would be an interesting problem, if it were a possible one, to figure in terms of horse-power, let us say, the extra amount of energy required to express the daily range of ideas in a language like the German over that required in a less involved and complicated one, the English for example With equal populations using the two it is easy to believe that the extra work could it be translated into motor power would be very real and appreciable by every ordinary intellect When we consider the other methods of conveying ideas, we can still further magnify our estimate of wasted labor and add to it the oceans of ink that it is almost a justifiable exaggeration to say have been expended over and above the increased manual [illegible] elf a tremendous strain in the

It may be there is sc [illegible], a clumsy language only for robust intellect, but it does not after all speak well for the intelligence that rests satisfied with imperfect methods or appliances when better ones are available Sometimes it is an inert conservatism that perpetuates them, sometimes a sentimentalism that in its bes aspect is only halfway respectable keeps them in vogue It seems also to many people a small matter to continue to endure abuses to which they have grown accustomed, and utterly needless to try to rectify them When the evils are only a few extra and ill-adapted words or clumsy constructions of speech, the average man hardly thinks enough to feel their inconvenience

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[1] Johns Hopkins Hospital Bulletin, 1896 Johns Hopkins Hospital Reports Vol. i
[2] Journal of Experimental Medicine, 1898
[3] New York Medical Journal, March 26, 1898.

How far science has suffered from the want of a convenient, economic and accurate terminology it is hard to say, but that it has suffered is not a matter for dispute Our scientific terms, especially in medicine, have developed haphazard by accretion, and a really scientific system of nomenclature appears to have been about the last thing thought of When the attempt has been made to make the terms descriptive the result has been mainly to make them cumbrous, and, in fact, it is impossible to have it otherwise What is needed is a practical, brief, concise and easily adapted and utilized nomenclature, and this should be the aim

The terminology of what may be called the finer gross anatomy of the central nervous system is the creation of the last thirty or thirty-five years at the most, but it has at present most of the defects of older systems, and it is safe to say is unintelligible to a large extent to the great mass of practicing physicians Even the students that annually go out from our medical colleges have a very inadequate acquaintance with it as a whole, and probably soon forget a large part of that they have Many of the terms in use are duplicated or triplicated, many more are needlessly cumbrous, as a whole there is no uniform plan or system To read understandingly an elaborate anatomic paper on the nervous centers requires sometimes, nowadays, a knowledge of the terminology of the subject in two or three languages, so varied are usages of authors

In the nomenclature of the Royal College of Physicians, which was adopted many years ago by the AMERICAN MEDICAL ASSOCIATION, and which is subject to decennial revision, the Latin, French and German equivalents are given

For a number of years Dr B G WILDER of Cornell University has been endeavoring to bring into use a simplified and consistent system of neurologic nomenclature, and the terms he has proposed have in many instances been adopted by prominent neurologists and seem likely to come into general use A recent and exceedingly meritorious work, that of Dr MILLS, adopts his system throughout, with the result that it affords almost the only consistently systematic nomenclature in any treatise of its kind on the disorders of the nervous system For this reason, however, it has been severely criticised, the average conservatism of the time reacting against what seems to it an innovation Dr WILDER's nomenclature has in it much that may seem novel, but its terms have the merit of brevity, are fully as descriptive or locative as those hitherto in general use, and the charge of cumbrousness that has been thoughtlessly made against them in some of these criticisms has least of all a valid basis Its adoption by Dr MILLS is to be considered as an advance and an advantage rather than a disadvantage to his book, for even if the terms do not all of them come into general use, most of them probably will, and the work will be therefore all the more in the front rank of medical literature

The need of a uniform and improved system of medical nomenclature generally is shown by the appointment of committees of anatomic societies here and abroad for its better regulation That this is a favorable sign of the times will be admitted, and each movement of the kind has its influence in bringing about the desired result The final perfected nomenclature will probably be to some extent an evolution, but all these preliminary attempts will have their influence in bringing it about, and probably none of them will be more influential in regard to nervous terminology than the elaborated and consistent system of Dr WILDER, however much objectors may criticise and temporarily prevail. It is only an extreme conservative who will not desire something better and more consistent than the cumbrous, arbitrary and polynomial nomenclature now in use

THE URINE OF THE MALARIAL FEVERS

Even when no specific action of the causal factor of this disease is exerted upon the kidneys, the urine of malarial subjects varies somewhat with the type of infection, whether regularly intermittent or estivo-autumnal, as well as remaining to a certain degree subservient to physiologic influences, as amount of fluid ingested, season, climate, time of day, and the other usual considerations In not a few cases, however, and it must be confessed that these are almost universally of the estivo-autumnal variety, the kidneys suffer severely, either in the production of an acute nephritis, or in the hemoglobinuria of pernicious ague, or both Again, a former attack or attacks of ague may have gradually produced a chronic nephritis, upon which an attack of pernicious estivo autumnal fever has engrafted an hemoglobinuria, as in the case reported by BROWN ("Malaria," report of twenty-eight cases), in which granular and epithelial casts were found in addition to red corpuscles and "shadows," the specific gravity in this case averaged 1010

Let us first take up the urinary changes present in the average number of ordinarily severe cases The daily amount varies as to whether a paroxysm has occurred on the day in question or not, for at the beginning of a paroxysm it frequently happens that a considerable amount of urine is passed The quantity also varies with the type of infection, in the regularly intermittents it is somewhat increased, while in the estivo-autumnal infections, when they cause a fever almost continuous in its action, the urine, as in all continued fevers, becomes diminished When convalescence is established, usually several days after the last chill, a slight polyuria is often manifest, this rarely exceeds four pints and may last a few days or weeks, depending as a rule on the severity of the attack As regards acidity, one would naturally expect that in fevers, concentration of the urine, other things being equal, would increase the acidity This is true in the malarial fevers, except in cases of the estivo-autumnal type, where the urine is not altered in this regard The color varies greatly, where fever is present it is high, and the higher the fever the deeper the color This fact depends upon two causes the concentration that occurs in all febrile processes, the chill with subsequent fever is coincident with the destruction of large numbers of red corpuscles, and at that time a large amount of pigment, transferred hemoglobin, is set free in the blood, to be immediately taken up by the leucocytes, while a part of this pigment is deposited in the various organs, especially the liver, no inconsiderable amount finds its way to the kidneys and appears in the urine as urobilin, which substance itself would lend deep coloring to the urine Some cases of malaria show a jaundice more or less marked, this may vary from the slightest perceptible tingeing of the conjunctivæ to a deep yellow, the very dark colors so characteristic of obstruction never occurring in uncomplicated cases This jaundice is always remotely hematogenous, a greater number of red corpuscles being destroyed than can be elaborated by the excreting organs, it occurs as a rule only in the severer cases, usually estivo-autumnal in character, cases in which not infrequently hemoglobinuria has supervened In such instances bile coloring matter may be proved to be present in the urine by means of the ordinary nitric acid contact test

As stated above, the jaundice is only remotely hematogenous, that is to say, it only primarily depends upon the destruction of the red corpuscles The pigment is in large part carried to the liver and a great increase in the secretion of the bile occurs so as to rid the overcharged system of as much deleterious matter as possible Indeed, the secretion is often so great that all cannot be disposed of through the excretory ducts, a backward pressure then occurs and reabsorption, with the production of jaundice, readily follows In the icteric attacks, bile is not very apt to be in the urine, as the kidneys very probably are able to transfer into urobilin some of the biliary compounds It is only when the latter are in great excess that the presence of bile can be proven As in other febrile affections, with a diminished excretion of fluid from the kidneys, there is a normal or increased amount of solids, so that during the paroxysms the specific gravity is increased, while in the intervals it is diminished, so that the total amount passed maintains a fairly good average, from 1045 to 1018 When infection is from the estivo-autumnal parasite, and the attack of sufficient severity to cause a continuous fever, the specific gravity, of course, remains permanently high As concerns the various normal ingredients of the urine, urea and uric acid are increased as are the various salts, phosphates, chlorids and sulphates The striking feature about this increase is that it is especially manifest during the post-malarial stage, the period of polyuria

Another point of interest in the solid constituents of the urine is the increase in the amount of iron This is augmented in any febrile disease, but more so in malaria than in any other The increase is particularly liable to be noticed after a paroxysm, and is undoubtly dependent upon the excessive destruction of red corpuscles The sediment of malaria is unusual from but one standpoint and that is best brought out by the use of the centrifuge, the presence of black pigment occasionally of such quantity as to produce a heavy deposit in the bottom of the tube as in the case reported by Forchheimer Among abnormal ingredients that might appear the first place must be allotted to albumen In all febrile affections a varying proportion of kidneys suffer, some from temporary changes, as manifested by the presence of albumin and casts which gradually disappear after the cessation of the original disease, while others are the subjects of acute inflammatory processes which do not answer readily to treatment and which finally become chronic In such a disease as the one under consideration, where specific organisms are present in the blood, naturally the delicate epithelial structure of the kidney would be almost certain to sustain some damage Such indeed is the case here, and a large proportion of malarial infections show a slight amount of albumin with an occasional cast, usually hyalin It is rather remarkable that under the provocation present an acute nephritis is of such uncommon occurrence Probably of more consequence than the parasites in the production of inflammatory nephritic changes, is the irritation of the large amount of pigment set free in the blood and excreted, at least to some extent by the kidneys, as shown by its appearance as a sediment and chemically by the increase in iron salts A well-known law of pathology tells us that slight irritation continued over a considerable length of time will inevitably result in the presence of new-formed connective tissue, which new-formed tissue will in the course of time most surely undergo cicatricial contraction Many cases of malaria, especially in the more southern latitudes where the estivo-autumnal parasite plays the leading rôle, are the subjects of changes in the kidneys of a chronic inflammatory type, interstitial nephritis, as evidenced by increased secretion of urine, pale color, low specific gravity, and the presence of a small amount of albumin with granular casts, even when the blood at the time of examination shows the patient to be free from active infection This change is possibly due to the constant irritation of the pigment, and has been demonstrated in individuals, the victims of paludism, in whom a possible alcoholic etiologic factor can be positively excluded The subject of malarial hemoglobinuria, while of great practical importance, is of not common occurrence, and is more properly treated under a separate heading

THE TYPHOID FEVER OF THE ARMY CAMPS

Sanitary men tell us that with our present knowledge of the causation of typhoid fever every death from that disease is an unnecessary death This is an excellent principle to hold in view for the guidance of municipal health officers who have some control over the insanitary factors concerned in the spread of the disease and of military medical men serving with well disciplined troops, but we can hardly expect regimental surgeons serving with our volunteer troops at the present time to subscribe to it Most of our hygienic authorities agree that hastily organized levies have to undergo a typhoid seasoning before they can be considered fit for active service, for every new regiment includes many young men who are susceptible to the disease and their number gives a corresponding susceptibility to the regiment, while the difficulties in the way of controlling the disease are very great This was our own experience in the Civil War In the first eighteen months of that war typhoid fever may be said to have been epidemic among the troops that were concentrated around Washington, D C In July, 1861, 2 20 cases occurred in every thousand of the 17,709 soldiers camped near the national capital, in August, 6 14 in every thousand of 50,608 men, in September a rate of 5 90 was recorded among 85,408 troops, in October, 7 23 among 113,204, and in November the highest rate of the year was reached, 10 89 cases in every thousand of 133,669 men, or a total of 1456 cases taken sick during that one month In October and November of the following year, on account of new levies camping on old and infected grounds, the recorded rates rose to 14 49 and 17 84, while the actual rates were really much higher, as most of the cases reported as common continued fever were cases of typhoid infection not included in the statistics of typhoid

In the Journal of June 4, 1898, we pointed out the danger to our troops from this deadly camp fever as being greater than that from yellow fever, which at the time was exercising a depressing influence on the public mind We held that unless special care were given to the sanitary condition of our camps, typhoid infection would be introduced and spread with disastrous results similar to those that followed the insanitary conditions of 1861–62 The first circular issued by Surgeon General Sternberg on April 25, four days after war was declared, urged on medical and commanding officers the importance of sanitary precautions for the prevention of disease in camps, and its publication was followed by arrangements for the supply of germ-proof filters to troops in the field These measures, however, were insufficient to counteract the many opposing influences that were brought into operation by the sudden aggregation of large bodies of raw troops and inexperienced officers, medical as well as line Typhoid fever infection, usually imported from state camping grounds, made its appearance in the large national camps and spread, but much less rapidly than during the concentrations of the civil war At Camp Alger, Va, at the close of the second month of its recent occupancy, there had occurred in all only thirty nine cases of fever among the 20,000 or more men on the ground, while at the corresponding period of 1861, the troops near Washington had already sent 8 34 out of every thousand men to hospital with typhoid fever Toward the middle of July, however, reports from Alger, Chickamauga Park and other camps indicated a rapid increase in the prevalence of the disease, and special inspectors were sent to inquire into the conditions which occasioned the increase These were found, in general, to be, not impurity of the water supply, but insanitary conditions due to want of knowledge on the part of the volunteer troops of how to take care of themselves in camp At Camp Alger the water supply from driven wells was organically pure and protected from surface drainage by a thick stratum of impermeable clay, but the tents were crowded against each other and all were overcrowded with men Regiments were cramped into an area insufficient for battalions, and, as a consequence, there was not room for a sufficiency of sink accommodation on the front or flanks of any of the commands These sinks necessarily became infected and the disease in some regiments began to assume the proportions of an epidemic Similar conditions prevailed in Chickamauga Park, Ga, where, in addition, sinks of suitable depth could not be dug owing to the underlying rock being so near the surface At Tampa, Fla, the height of the subsoil water level necessitated the use of sinks so shallow that when heavy rains fell the infected contents were flushed out of them over the camp surface These and other insanitary conditions due to continued occupancy led to prompt action by the War Department Boards of officers were sent to inspect and select new sites for camping grounds and many of the troops are now under orders to march from the old to the new grounds During a march of ten days or two weeks the cases of fever due to infection in the old camp will be developed and removed to hospital, so that the command on reaching its new site will be free from the disease, and its protection thereafter will depend on the care given by officers to the sanitation of their camps The chapter hereafter to be written in the medical history of the Spanish-American War on the development and suppression of the typhoid fever outbreak will be one of much interest to medical men and military sanitarians It may do much to emphasize the fact that a death from typhoid fever is an unnecessary death The War Department, meanwhile, has urged upon all officers, from the commanding general to the company commander, the exercise of the utmost vigilance to enforce proper sanitary conditions in camp, that the armies may profit by their recent experiences We print the sanitary orders of the Department on another page of the JOURNAL

THE RETURN OF SHAFTER'S ARMY

Three months ago, that is when the invasion of Cuba was the subject of general interest, few medical men expected that our troops operating in that island would escape visitation from yellow fever The profession was therefore not surprised when, about the middle of July, the announcement was made of the presence of the disease in the lines around Santiago Fortunately the capture of the city and the removal of all armed resistance from its front enabled the army to devote the whole of its much exhausted energies to taking care of itself Two methods of campaign, as it might be called, against this insidious foe were open to the military commanders One was that of moving from camp to camp on the high grounds back of Santiago and removing the febrile cases and suspects until each regiment was free from the disease, when it could be embarked for Porto Rico or a United States port without danger to itself or to others Medical men would probably have considered this the better course, but in view of the exhausted condition of the troops a call was made by the military authorities in Cuba for the adoption of the other, the immediate return of the troops to some locality in the United States where the danger of propagating infection would be reduced to a minimum This involved the danger of a disastrous outbreak on some of the transports while en route, with quarantine detentions at the home port and the possibility of infection finding a landing and transmission to some part of the United States where the conditions were favorable for its development Prior to this call, however, arrangements had been made by the President and the Secretary of War, after consultation with the Surgeon-General of the Army as to their feasibility, for the return of the troops that are not sick with yellow fever or with suspected yellow fever Telegraphic instructions approved by the Surgeon-General were sent to Santiago to ensure the best sanitary conditions of the transports and of the troops and their baggage at the time of embarkation These instructions read as follows

1 Hold troops assigned to a transport under observation three to five days in separate camp not infected by fever

2 Surgeons to inspect same twice daily, isolating promptly suspected cases

3 Bathe and freshly clothe or sterilize old clothing of troops at the beginning of period of observation

4 When not possible to detain troops in camps under observation, bathe them and freshly clothe or sterilize old clothing before embarkation, excluding, after searching inspection, suspected cases

5 Yellow fever convalescents or suspects should not accompany healthy troops

6 No equipage nor personal effects capable of conveying infection should accompany troops unless disinfected by steam or otherwise

7 Arrange to embark by daylight under a careful supervision of surgeons, who will control sanitary conditions of troop-ships en route

In the meantime a camp was laid out at Montauk Point, L I, for the accommodation of the troops, and provision was made for hospitals for the sick and wounded, for hospitals and isolation camps for yellow fever patients and suspects, and for the careful inspection of each transport and the troops brought by her prior to their disembarkation, with thorough disinfection of persons, clothing and other personal effects Colonel **WM H FORWOOD**, Assistant Surgeon-General, U S A, is in charge of the medical department at the new camp Passed Assistant Surgeon G M **MAGRUDER** and Sanitary Inspector W F **BRUNER**, formerly inspector for this Government at the Port of Havana, are on quarantine duty as boarding and inspecting officers, and Drs **KINYOUN** and **HASTINGS** have charge of the arrangements for disinfection In view of these precautionary measures, we may expect to learn of the transfer of the army without mishap to itself or to the country

CORRESPONDENCE

The Medical Department of the Army

CHICAGO, Aug 9, 1898

To the Editor —Apropos of your editorial on the Medical Department of the U S Army and Navy, permit me to make a few suggestions

My experience as Major and Surgeon of the First Ill Cavalry, U S Vol, convinces me that the Medical Department of the Army, as at present constituted, is all wrong My opinion of the Department as it exists at present is that it is both incompetent and inefficient, and I think this charge will be borne out by others of the volunteer surgeons in the service

This condition of affairs is not to be wondered at when we take into consideration the various ranks of the medical officers The Surgeon General only ranks as Brigadier General, the Deputy Surgeon General as Lieutenant Colonel and so on down the line It goes without saying that men who are sufficiently endowed by nature with brains and ability to enable them to take an elevated position in this profession can not be induced to enter the army service when the highest position they can attain is that of Brigadier General We have seen the melancholy spectacle of beardless boys among the combatants ranking men who had grown gray in the medical service The experiences of the present war have proved that the Medical Department is of equal importance to the Field and Staff We have seen that sickness and disease kill more men than do bullets, hence the demand for medical officers that will be fully equal to any requirements occasion may demand

How can this be accomplished? It can be done by raising the rank of the Medical Department, so that the Surgeon General of the Army will be a Major General, a Deputy Surgeon General a Brigadier General, and so on all the way down If this were done the Army Medical Department would be a desirable service, and would attract men of large ability

Again, it is my opinion that the Medical Department should be made entirely separate It should be cut loose from the line, the Quartermaster's and all other departments, and only in the matter of issuing rations should the Commissary be drawn upon The Medical Department should provide its own transportation in the way of cars, hospital ships, and if necessary, transports The commanding general should be required to notify the surgeon in charge when a movement was going to be made, what regiments were included, and when an engagement was to take place Then the medical officers could make full provision for the care of the sick and wounded, and their transportation from the field of battle Under these conditions there could be no shirking of responsibility, and the shameful sight of an altercation between the Commanding General and the Surgeon General, such as we are now being treated to over the Santiago campaign, would be an impossibility

If the Surgeon General had been instructed to purchase all supplies required for the Medical Department, and if those instructions had been carried out in a competent and efficient manner, there could have been none of the horrors, such as our men had to endure during the present Santiago campaign, which were totally unnecessary and uncalled for If the regimental and division hospitals at Santiago were no better equipped than those at Chickamauga, I feel sorry for them

And now for the charges of incompetency and inefficiency On my arrival at Chickamauga I reported to the Medical Director of the Department and asked for supplies for my hospital I was asked what I had brought with me, and when I replied, "nothing," I was told that "that's the way with you volunteers, you come down with nothing and expect us to equip you" I said that I certainly expected to be equipped, as the State authorities told us to leave everything and we would be supplied by the U S authorities at Chickamauga. To make a long story short, it took me three or four days before I could get a drug supply, and that entirely inadequate

Upon my arrival in Chickamauga I made requisition on the quartermaster for a hospital tent. It was nearly a week before I got that Up to the time of my leaving Camp Thomas, every regimental hospital was most poorly supplied with even the necessaries for daily use

Under these circumstances what would we have done had we been suddenly ordered to the front? It would simply have been a repetition of Santiago

The excuse for not equipping us properly was that we were to send all our sick to the division hospital As my regiment was not attached to any division, I was told that I could not be supplied because they did not have the things I asked for supplied from Washington

There were lots of cots at department headquarters, but it was days before I could get any There were ambulances down there by the dozens, but up to the time of my departure I could not get a regimental ambulance, when I was entitled to *two* Every day or so it was impressed on me that I must use the most *extreme economy* in the prescribing of drugs and medical supplies As if I was going to wantonly waste the property! Instead of being asked by the proper authorities what drugs and supplies I was in need of, and having this proper authority see to it that not only my regiment, but all other regiments were properly and thoroughly equipped with everything necessary to properly care for the sick and wounded, I was compelled to find out for myself to what my regiment was entitled, and then fight for everything I received To cite an instance, I sent in a requisition and told them it was emergent As I did not hear anything from it for two days, I went after the things personally, and was told by the Medical Director to go over to the first division hospital for the supplies Among other things applied for was one gallon of castor oil and a pound of laudanum, with which to treat camp diarrhea, which was prevalent at that time In response to my requisition the division hospital sent me twelve ounces of castor oil and one ounce of laudanum, the other articles were ignored

These, Mr Editor, are some instances of how the Medical Department was administered at Camp G H Thomas If regimental hospitals were well supplied and equipped, then it would have been a very easy matter to have properly organized brigade or division hospitals when the troops were ordered to the front All the regiments could have transferred their supplies to the general hospitals before an action came on, and have left them there as long as that division remained intact

On the requisition list of the U S Army, which was handed me, there were no such articles as condensed milk, malted milk, nor canned soups of any kind We were not supplied with sheets, pillows, pillow cases, nor any such articles of absolute necessity for a hospital If I had not drawn upon my lady friends in Chicago, Springfield and elsewhere, for money to buy ice and milk, and for sheets, pillow slips and night shirts, I would have had a sorry looking hospital If the Red Cross Society can supply all these things, why can not the Medical Department of the U S Army, with a rich, powerful Government behind it, equip its army hospitals beyond reproach? If numbers of medical men whom I could name had been placed at the head of affairs, our whole army would have been completely equipped with every medical and surgical necessity they could require, in *three days*

I trust, Mr Editor, that the horrible condition of things which existed at Santiago, as well as the disgraceful sanitary conditions of the various camps, will be investigated, and the whole Army Medical Department reorganized To refer to requisitions In one of my applications for supplies I asked for carbolic acid and boric acid The carbolic acid was struck off my list, as the Medical Purveyor was instructed not to issue it As I did not receive the boric acid I made inquiries as to why it was not issued, and was told there was none in the camp, as it was not supplied to the army These are two of the most efficient and cheap antiseptics, which I had to do without As I had a large number of infected arms, caused by men interfering with their vaccination dressings, it can easily be imagined what a fix I was in As a result I had a number of axillary abscesses, and some of the men had fearfully swollen arms which confined them to the hospitals or "quarters"

At Chickamauga there were thousands of men camped for months, during extremely hot weather, yet there were no ice machines provided to furnish ice for the troops, nor were any provisions made to supply the men with ice, till Dr Gill of the Red Cross Society made his appearance

The foregoing are a few of the glaring instances of incompetency and inefficiency which occurred during my stay at the camp

And now a few words as the water supply A number of the wells were drilled throughout the camp to supply water for drinking purposes A pipe line was run from the Chickamauga River to supply water for the horses and for washing purposes. The Chickamauga is a dirty, sluggish stream, which drains the greater part of that country All the ditches which drained the camp empty into that stream The men were told not to drink that water, but when a lot of men are tired, hot and thirsty, injunctions of that kind are not heeded, and many of them drank frequently of the water Not more than two miles farther on, a clear pure, limpid stream issued from the rock at Crawfish Springs, in volume sufficient to have furnished the camp with water for all purposes Why was this water supply not secured instead of the Chickamauga River? The result is that typhoid fever is epidemic at Camp George H Thomas, and the troops remaining there will, in all probability have to be removed to other locations

Trusting you will give this letter publication, in the hope that it may help to correct the glaring defects which exist in the army today, I am, sir, Very truly yours,

Wm Cuthbertson,
Late Major and Surgeon First Illinois Vol Cavalry

Condition of Santiago

Santiago, Cuba, July 15, 1898

To the Editor —I have just been through the city of Santiago de Cuba The terms of capitulation will be published before this reaches you I found the city full of stench and disease, no sanitation Dead horses, dogs, cats and other animals that starvation had deprived of life are lying bloated and decomposing in the rough, dirty, narrow streets Thermal fever, dysentery, acute diarrhea and yellow fever are disseminated through the city The city water supply comes through an eight-inch main which is inadequate for a city of 60,000 The sewerage is almost *nil* The refuse from the kitchen, such as starvation will give, is strewn into the streets to decompose in the hot sun and daily showers The streets are full of deep holes, four or five feet wide by one to three feet deep, which speedily become receptacles for the decomposing animal matter and are so many cesspools of nauseating odor General Shafter has wisely refused to let any of our troops pass into the city More of Santiago in my next

There are 26 cases and 3 deaths from yellow fever in the camp near Santiago, 146 cases at Sibone (pronounced Siboney) The number of deaths has not been received today Of 140 cases of malarial, bilious and thermal fevers in four hospitals, 65 have been discharged for duty Thirty two wounded are still in the division hospital The yellow fever hospital is three-fourths of a mile from the main camp on a hill The fever hospital and division hospital for wounded are one quarter of a mile apart.

Sanitation is improving and all doing well Dr Pope has worked heroically and deserves the thanks of the American people for his untiring efforts, although often unsuccessful

Drs Combs and Jones are in charge of the yellow fever hospital near Santiago, Dr Wood in charge of the division hospital, and Dr La Garde of the general hospital at Sibone

Recapitulation 1342 wounded in all of the battles since landing in Cuba, 100 deaths so far from wounds, killed and missing, 168 yellow fever cases and 28 deaths from the same cause Orlando Ducker, M D , U S V

Malingering

Unionville, N Y , Aug 10, 1898

To the Editor —I read the Journal with great interest and profit every week Your editorial on "Malingering" (p 247, July 30) has just been read with keen interest and suggests that I give you an outline of a case in point

Mrs E V C , married, one child, aged 35 years, is of an extremely nervous temperament, light weight mentally, but with a glib tongue that elicits the sympathy of similarly constituted persons Both parents are weak mentally, although father has brilliant spells, but lacks balance and judgment In January and February, 1894, Mrs C had attacks of hysteria and believed she had a cancer of her uterus, which I told her she did not have, but she did not believe it Every day or two she would have attacks of pelvic pains, a little diarrhea and a slight uterine discharge During these months she had frequent hysteric convulsions with which she impressed her sympathizers that she had almost died, and it seemed to give her encouragement to have another if she could make her attendants believe she was nearly dead during her spell She had some time before had an operation for lacerated cervix Nothing would satisfy her but that nearly every day I must make some kind of an application to the uterus for treatment, and insert a tampon This I did more to satisfy her than for any good it did I urged cotton tampons soaked in glycerin and tannic acid and occasionally sprinkled a little powdered opium where it would come in contact with a slightly abraded cervix I occasionally applied to the inside of cervix tincture of iodin, weak solution carbolic acid, etc Two or three times I made an application of a weak solution of nitrate of silver (3 gr to ℥i) in the usual way with the applicator wound with cotton Using silver nitrate was done more for its mental effect than for any good I hoped to accomplish, for I knew she would try to find out all about nitrate of silver, and finding it to be a strong drug it would satisfy her intense desire that I should use powerful remedies to "kill her cancer " I reckoned wrongly for she soon fell into the hands of a clairvoyant and he told her that she had no cancer, which she promptly believed, but told her that her doctor had "burned her insides all out with nitrate of silver " He easily convinced her that she had no cancer, which I was unable to do, and as easily convinced her that I had ruined her health under the use of nitrate of silver She soon wanted me to pay her damages for "ruining her health and burning her insides all out ",

Physically she is a strong, robust and healthy woman, and is on the go all the time and has been since I quit attending her, Feb 27, 1894 But most of the time she has been malingering and now and then would work herself up to that pitch where she would either write me a letter or get a lawyer to, demanding damages These I never paid any attention to except to send them back to her She has now within the last few days gotten a reputable firm of lawyers to sue me for malpractice I am interested to know what kind of a case they can work up It is my candid opinion that she has, with the sympathy of her few mental equals, worked herself up to a belief that I will pay her several hundred dollars rather than have the matter come in the courts

Are not physicians constantly in danger of expense and trouble from these people, if they treat them, and of annoyance and criticisms if they do not? Truly,

F W Dennis, M D

Objects to New Designation

Shelbyville, Ind , Aug 15, 1898

To the Editor —I object to the proposed new designation for our profession, suggested by Dr Fenn in the Journal of August 13 Dr Sternberg, in his address at Denver, did not recommend the adoption of the title "New School of Scientific Medicine," but merely said, "If we are to be characterized by any distinctive name, this would be the only one applicable "

From the days of Hippocrates to the present, we have always been the scientific school of medicine according to the best light we had The celebrated John Hunter one day said to a member of his class whom he noticed taking notes during one of his masterly lectures on inflammation, "Don't take any notes of what I say today on this subject, I may not think next year as I think today " He was always a member of the "new school of scientific medicine," and kept abreast of the times

We should always object to [illegible] tles " [illegible] school" "allopath " names given to us [illegible] and paths, and simply call ourselves physicians, without any annex or prefix It almost seemed a necessity for us to semi officially adopt the word "regular," which, in my opinion, is the only designation we should ever use, and only using this for the information and benefit of the laity The word "regular" has been the subject of more criticism than any ten sentences in our "Code of Ethics" In the old "Army Regulations," in paragraph 1544, *when describing the essential qualifications of* one who aspires to an appointment in the medical department of the army, among other requirements is found this very emphatic one, "And he *must* be a graduate of a *regular* medical college"

During the war of the rebellion, a committee was appointed from the eclectic and homeopathic medical schools of New York and Philadelphia to correspond with Surgeon General Hammond and inquire of him as to the meaning of the word "regular" as used by the Government His reply was dated from the War Department, Surgeon General's Office, Washington, D C, June 1, 1863, and was as follows "The term 'regular' is used in its most comprehensive sense, as indicating that a college is well equipped and prepared to cover the *whole* ground of the science and art of medicine and surgery in its teaching"

Then, if we are to be designated by any distinctive name, I think that the only one that is applicable is the word "regular," which has been officially defined by the medical department of the United States, and more than fifty years ago was adopted by our "Code of Ethics," and which always represents progressive scientific medicine throughout the civilized world Respectfully,

W Gaston McFadden, M D

Wounds Requiring Operation

Reserve Ambulance Company, Tampa, Fla., Aug 10, 1898

To the Editor —In your issue of July 30, I notice that an official report, rendered by me on returning with wounded from the fracas near Santiago, serves as a basis for editorial comment Permit me to correct the statement there credited to me that "surgical operations were required only in shell wounds," a rather more sweeping assertion than I should care to be responsible for It is, however, true that shell wounds were *invariably serious and almost always accompanied* by such extensive laceration and comminution as to render grave operative interference necessary Mauser wounds, on the contrary, were usually humane and, with the undeformed bullet, were quite free from the so called explosive effect anticipated by the theorists, but they nevertheless occasionally required surgical operations of a more or less serious character "Key hole" *wounds and those produced by deformed bullets* sometimes presented such extensive destruction as to necessitate operation, but the proportion of such operations was surprisingly small Mauser wounds were "trivial" as compared with those produced by large caliber bullets, on account of the greatly lessened destruction of tissue and the almost total absence of wound infection

Very respectfully,

Edward L Munson, Capt and Asst Surg U S A

Precocious Pregnancy, Twin Births

Montevallo, Ala, Aug 6, 1898

To the Editor —I wish to mention the case of a negro girl whom I delivered of twins, Feb 5, 1897 This girl was born and raised in Bolling, Ala At 11 years of age, she began to menstruate regularly, became a prostitute soon afterward, and was delivered of twins at the age of 13 years, 9 months and 5 days Both children were females One is living, the other was *accidentally smothered* when five days old The first child presented *feet foremost*, the second came "head first" *The afterbirth was adherent* I administered chloroform and, after introducing the hand, detached it There was some hemorrhage, but a hot douche controlled it The mother was exceedingly well developed for her age and made a speedy recovery I inclose a copy of the birth certificate

Very truly yours,

D L Wilkinson, A B, M D

Antitoxin

Philadelphia, Pa, Aug 8, 1898

To the Editor —We beg to inform you that the validity of Letters Patent on Antitoxin recently granted by the U S Patent will be duly tested in the proper courts We write to authorize you to make the public statement that we will protect to the utmost, purchasers and users of Mulford's concentrated antitoxic serum and other antitoxins We hasten to make this in order that the demand for the remedy, which increases as the season advances, may be supplied without delay or hesitancy

We have secured the services of W Horace Hepburn, Esq, and Howson & Howson, competent attorneys of this city, to represent us, and have no doubt but that the claim will be disallowed, in justice to our country in general, and each family in particular

Thanking you for your interest in the matter, we remain

Yours very truly,

H K Mulford Company,

By H K Mulford, Vice president.

ASSOCIATION NEWS

Rush Monument Fund —*To the Editor* —The following subscriptions to the Rush Monument Fund have been received

June 21, Maine Medical Association (through Dr Chas D Smith Secretary)	$ 100 00	
June 29, Committee of Arrangements, Philadelphia Meeting American Medical Association (through Dr Thos G Ashton Treasurer)	185 68	
July 20 Subscriptions at Denver Meeting American Medical Association (through Medical Director Albert L Gihon Chairman)		
From Colorado	2,000 00	
From New York	2,000 00	
From Ohio	330 25	
From Indiana	320 90	
From Tennessee	130 00	
From California	110 50	
From Wisconsin	78 00	
From Texas	36 50	
From Med Director Albert S Gihon, U S N	25 00	
Total	$5,322 83	
Reported to American Med Association at Denver	4 424 27	
		$9 747 27
Total expenditures		112 25
Total funds in hand		$9 635 02

The above sum, *in cash and secured investments*, has this day been transferred to Dr Henry D Holton of Brattleboro, Vt, who was elected Treasurer of the Committee by vote of the Association at the Denver meeting Dr Holton will be glad to receive and acknowledge further subscriptions to the fund

George H Rohe,

Secretary Rush Monument Committee

Baltimore, Aug 9, 1898

Rush vs Hahnemann Monument Fund —Every visitor to the *American Medical Association remembers the difficulties* encountered by the Rush Monument Fund Committee in its work The statement has been made at these meetings that the Homeopathic fraternity, with a much smaller membership, had raised a much larger fund, and were having executed a much finer monument to Hahnemann than the one contemplated to Benjamin Rush Now cometh the statement that *the Hahnemann monument is finished, but that it is not in* place and will not be until the profession comes forward with the sum necessary to pay for it. What the delinquency amounts to is not stated further than that "three dollars from each homeopathic physician in America would liquidate all claims and place the monument in Washington "—*Columbus* (Ohio) *Med Jour* , August 2

SOCIETY NEWS

New York State Medical Association —The regular annual meeting of the New York State Medical Association will be held at 64 Madison Avenue, New York City, on Oct. 18, 19 and 20, 1898 The following is the preliminary program

A Practical Demonstration in the Reduction of Infantile Mortality, by Dr E F Brush of Mount Vernon

The Pneumogastric Nerve in the Production of Stomach Disease, by Dr Julius Pohlman of Buffalo

The Coccyx, by Dr J E Walker of Hornellsville

Drugs versus Cardiac Insufficiency, by Dr C T Osborne of New Haven

The Passing of Alcohol, by Dr J M Farrington of Binghamton

A New Method of Amputation at the Knee-Joint Applicable in Cases of Senile Gangrene of the Foot, by Dr Stephen Smith of New York

Anthropologic Rambles in the Orient, Especially in the Island of Java, profusely illustrated with stereopticon views, by Dr H Ernst Schmidt of White Plains

Dental Pathology in its Relationship to General Health, by Dr Dwight L Hubbard of New York

Subnormal Temperature, by Dr Leroy J Brooks of Norwich

Ancient and Modern Animal Products Used as Medicines, by Dr T J Acker of Croton on Hudson

The Treatment of Cases of Pulmonary Tuberculosis that Cannot go Away from Home, by Dr Delancey Rochester of Buffalo

Some Observations of General Interest Regarding the Course and Management of Cataract, by Dr J H Woodward of New York

Technic and Use of Saline Infusion, by Dr Thomas F Reilly of New York

What to Do to be Saved, being the Conclusion of the Inquiry into the Abuse of Medical Charity, by Dr Thomas J Hillis of New York

True and False Medical and Other Charities, by Dr Wickes Washburn of New York

A paper by Dr Charles Phelps of New York, title not yet announced

Genital Neuralgia and the Genito reflex Pains by Dr F P Hammond of New York

Lantern Slide Exhibition, by Dr S Alexander of New York

A Case of Attempted Obliteration of the Deformity in Pott's Disease, by Dr Charles Alling Tuttle of New Haven

Notes on Neuralgic Affections of the Head, by Dr Gustavus Eliot of New Haven

The Use of Catgut Sutures in Ventrofixation of the Uterus, by Dr J E Janvrin of New York

Traumatic Tetanus, Report of a Case Following an Attempted Operation, Treatment, etc , by Dr Z G Lusk of Warsaw

Some Thoughts on Rational Treatment of Disease, by Dr Chauncey P Briggs of Ithaca

Senility, by Dr F W Higgins of Cortland

A Case of Extrauterine Pregnancy Operated Upon at Term, by Dr Eli Van de Warker of Syracuse

Memoranda, by Dr H D Didama of Syracuse

Diagnosis and Surgical Treatment of Renal Calculus, by Dr N Jacobson of Syracuse

Eye Lesions in Some Diseases of the Kidney, by Dr H S Oppenheimer of New York

Insanity Following Surgical Operations, by Dr W D Granger of Bronxville

Dermoid Cysts of the Ovary, by Dr C E Fritts of Hudson

The Operative Cure of Inguinal Hernia in Men, by Dr E D Ferguson of Troy

Urethral Stricture, by Dr J W S Gouley of New York

A Discussion on Intestinal Obstruction, comprising the following papers

Introduction by Dr Parker Syms of New York

The Causes of Acute Intestinal Obstruction, with a Description of Their Mechanism, by Dr E D Ferguson

The Causes of Chronic Intestinal Obstruction, with a Description of Their Mechanism, by Dr J D Bryant of New York

Intestinal Obstruction Due to Impaction of Feces, Gall Stones, Foreign Bodies, etc , by Dr J W S Gouley

The Diagnosis and Indications for Treatment of Acute Intestinal Obstruction, by Dr J D Rushmore of Brooklyn

The Diagnosis and Indications for Treatment of Chronic Intestinal Obstruction, by Dr Leroy J Brooks

Intestinal Obstruction Due to Intussusception and Volvulus, by Dr John F Erdmann of New York.

The Technique of Operative Treatment of Intestinal Obstruction, by Dr Frederick Holme Wiggin of New York

PUBLIC HEALTH

Transmission of Typhoid Fever Through the Air —Germano has published the results of experiments made at the suggestion and under the direction of M Kruse, and having for their object to study the possibility of the transmission of typhoid fever through the air These experiments, made with different specimens of earth and substances infected by Eberth's bacillus, demonstrate that these organisms do not long resist complete dessication For this reason the author claims that the spread of typhoid fever by means of dry dust is impossible, and that the assertion of certain authors, Troidboise among others, that the infection may spread several meters through the air is scarcely probable On the other hand, the experiments of Germano, as well as of other writers, appear to prove that, in certain conditions of humidity, the pathogenic agent of typhoid fever not only remains alive for a rather long period, but may even preserve its vitality when in a condition of apparent dessication Conditions favorable to transmission are produced, above all, when typhoid bacilli adhere to subjects which easily retain moisture, such as linen, cloth earth, dust and fecal matter Even in these circumstances, however, the microbes generally perish after dessication although some of the most resistant survive The danger consists not so much in particles of these substances being carried through the air, since, when the mechanical fragmentation is carried to an extreme degree, the microbes perish, as in the fact that such particles may gain access to the mouth of susceptible subjects The essential danger of propagation of the typhoid bacillus lies in the power of the organism to live for a long time when dessication is incomplete This property may explain the spread of many epidemics —*Health*

Aerial Convection of Smallpox —That a smallpox hospital in a poor and crowded locality may be, and usually is, a source of infection to the surrounding neighborhood is not denied, it is when we come to inquire for the causes of the spread in its vicinity that doubt and difficulty arise, and it is impossible to agree with Dr Priestly that so long as a smallpox hospital is allowed to be a source of danger, whether it be by aërial infection or by maladministration, it does not concern a medical officer of health as a matter of fact, for the question is not merely of academic interest, seeing that its solution must be of some importance, not as an argument for or against placing smallpox hospitals in crowded localities, but in view of the selection of a site within a mile of any human dwelling In every smallpox epidemic it is found that a certain percentage of cases around a hospital can be traced, apart from any question of maladministration, to ordinary known channels of infection, such as the incomings and outgoings of nurses, staff, tradesmen, patients, and friends of patients, and these are and must invariably be intensified as we approach such a center as a smallpox hospital, but even after the most searching inquiry a residuum remains to which no clue has been discovered, and of these it is said that they diminish in number as we get farther from the hospital, which is not invariably the case, and that they are not in excess along the main approaches, which we should have no right to expec[illegible] for the [illegible]ople who [illegible] in a street are not always th[illegible] e [illegible] T [illegible] of this residuum is al[illegible] been shown even when ing the progress of an epidemic, much more after a lapse of weeks or months, yet it is upon the complete elimination of these cases that the theory of distal aerial infection is based That the theory has never been disproved is no argument in its favor, for the same might be said of the wonders worked by the diviner's rod The main question is whether the theory fits in with the facts, if it does not, then it has not come to stay, but must make way for some other that will Observations are wanted, especially in the country, where facts can be ascertained with much more precision than in a populous center There must be many available from medical officers of health and medical practitioners throughout the country if only they could be collected The chief difficulty, however, in accepting the distal infection theory remains to be noticed, viz, the startling immunity which has over and over again been observed in large bodies of presumably susceptible individuals living near to smallpox hospitals and among whom, according to the distal aerial theory, smallpox should have appeared with an intensity proportioned to their nearness to the center of infection No explanation is offered for these remarkable exemptions from the incidence of a disease which (within limits still undefined) is acknowledged to be infectious above all others, and when it is borne in mind that by the chance discovery of its origin in a single case a clue might be given which would sweep away the better part or even the whole of the residuum on which the "circle argument" is based, the conclusion is irresistible that the theory of distal aerial infection rests on a very imperfect basis and that much more evidence is required before it can meet with general acceptance —London *Lancet*

Vital Statistics for June, 1898, in the State of New York —June is always, next to November, the month of least mortality in this State, with an average daily mortality of 320 for the entire year, for the past ten years, that of June has been 294 The daily average for the past month reported has been 288, that of the five months preceding having been 325 Compared with the preceding month of May there were 1100 fewer deaths reported, of which decrease 300 occurred in the maritime district, the death rate has lessened from 17 15 per 1000 population to 16 00 Aside from diarrheal diseases there were 100 fewer deaths from zymotic diseases this month Diarrheal diseases caused 250 more deaths than in May From acute respiratory diseases there were hardly more than half as many deaths, there having been about 700 fewer than in May, and there were 120 fewer deaths from consumption Diseases of the digestive organs caused more deaths than in May, but other local diseases show a considerable decrease Accidental deaths, many of which were from drowning, caused an increase of 100 over May Fewer deaths from old age occurred this month Compared with June, 1897, there were fewer deaths in all of the sanitary districts, the maritime district reporting 150 fewer, and in the entire State the reported mortality is less by 400, and by nearly as many is it less than the average of June for the past ten years A large part of this decrease is in the mortality of early life, and one half of it is in zymotic diseases There is also a considerable decrease in acute respiratory diseases Diarrheal diseases caused 375 deaths, half the usual mortality for June Diphtheria caused 175 deaths, or 50 less than in May, and one half that of June, 1897 Whooping cough caused 111 deaths, the same number as in May and double that of last June Cerebrospinal meningitis is also very much more prevalent than a year ago, 110 deaths being reported from it, which is excessive, all the sanitary districts reporting it, but the increase is mainly in the maritime district Consumption shows the usual June mortality, about 1000 deaths Smallpox has developed in no new localities since the report of last month. All of the ten reported localities, except Fredonia and Moravia, are believed to be free from the disease and these are probably soon to be relieved Of the 50 cases in all, 8 occurred in the troupe importing it, the cases have been generally very mild, no fatality occurring The mean temperature for the month was 1 degree above the normal of 66 degrees, the average highest being 90 degrees, lowest 43 degrees, there were ten clear days and a slight deficiency for the State in rain fall, although this was excessive in the eastern part of the State, winds southwesterly —*Bulletin of the State Board of Health*, New York.

Health in Chicago —The report of the Department of Health for July gives the total deaths for the month as 1938, a rate of 1 20 per 1000 as compared with 1 44 for July, 1897, and 1 52 for July, 1896 Of these deaths, 614 were of persons under one year of age, and 241 between one and five years The principal causes were Diseases of the nervous system, 246, diarrheal diseases, 247, other acute intestinal diseases, 208, consumption, 163, heart diseases, 119, pneumonia, 77, typhoid fever, 55, diphtheria and membranous croup, 48, cancer, 48, bronchitis, 34

Circular No 5 —

War Department, Surgeon General's Office,
Washington, Aug 8, 1898

The attention of medical officers is invited to Circular No 1 from this office dated Washington, April 25, 1898

The extensive prevalence of typhoid fever in camps of instruction indicates that the sanitary recommendations made in this circular have not been carried out If medical officers have failed to make the proper recommendations as indicated, the responsibility rests with them If the recommendations have been made and not acted upon by those having authority in the various camps, *the responsibility is not with the* Medical Department, but these recommendations should be repeated and commanding officers urged to move their camps at frequent intervals and to maintain a strict sanitary police

Geo M Sternberg, Surgeon General, U S Army

War Department, Surgeon General's Office,
Washington, April 25, 1898

Circular No 1

In time of war a great responsibility rests upon medical officers of the Army, for the result of a campaign may depend upon the sanitary measures adopted or neglected by commanding generals of armies in the field The medical officer is responsible for proper recommendations relating to the protection of the health of troops in camp or in garrison, and it is believed that, as a rule, medical officers of the United States Army are well informed as to the necessary measures of prophylaxis and the serious results which infallibly follow a neglect of these measures, especially when unacclimated troops are called upon for service in a tropical or semitropical country during the sickly season In Cuba our armies will have to contend not only with malarial fevers and the usual camp diseases—typhoid fever, diarrhea, and dysentery—but they will be more or less exposed in localities where yellow fever is endemic, and under conditions extremely favorable for the development of an epidemic among unacclimated troops In view *of this danger, the attention of medical officers*, and of all others responsible for the health of our troops in the field, is invited to the following recommendations

When practicable, camps should be established on high and well drained ground not previously occupied

Sinks should be dug before a camp is occupied, or as soon after as practicable The surface of fecal matter should be covered with fresh earth or quicklime or ashes three times a day

New sinks should be dug and old ones filled when contents of old ones are two feet from surface of ground

Every man should be punished who fails to make use of the sinks

All kitchen refuse should be promptly buried and perfect sanitary police maintained

Troops should drink only boiled or filtered water and coffee or tea (hot or cold), except where spring water can be obtained which is pronounced to be wholesome by a medical officer

Every case of fever should receive prompt attention If albumin is found in the urine of a patient with fever it should be considered suspicious (of yellow fever) and he should be placed in an isolated tent The discharges of patients with fever should always be disinfected at once with a solution of carbolic acid (5 per cent.) or of chloride of lime (6 oz to a gal lon of water), or with milk of lime, made from fresh quick lime

Whenever a case of yellow fever occurs in camp the troops should be promptly moved to a fresh camping ground, located a mile or more from infected camp

No doubt typhoid fever, camp diarrhea, and probably yellow fever are frequently communicated to soldiers in camp through the agency of flies, which swarm about fecal matter and filth of all kinds deposited upon the ground or in shallow pits, and directly convey infectious material, attached to their feet or contained in their excreta, to the food which is exposed while being prepared at the company kitchens, or while being served in the mess tent It is for this reason that a strict sanitary police is so important. Also because the water supply may be contaminated in the same way, or by surface drainage

If it can be avoided, marches should not be made in the hottest part of the day—from 10 A M to 5 P M

When called upon for duty at night or early in the morning, a cup of hot coffee should be taken

It is unsafe to eat heartily or drink freely when greatly fatigued or overheated

Ripe fruit may be eaten in moderation, but green or over ripe fruit will give rise to bowel complaints Food should be thoroughly cooked and free from fermentation or putrefactive changes

In decidedly malarious localties, from 3 to 5 grains of quinin may be taken in the early morning, as a prophylactic, but the taking of quinin as a routine practice should only be recommended under exceptional circumstances

Light woolen underclothing should be worn, and when a soldier's clothing or bedding becomes damp from exposure to rain or heavy dews the first opportunity should be taken to dry it in the sun or by fires

GEO M STERNBERG,
Surgeon General U S Army

[NOTE.—Circular No 3 is the last of the series of 1897]

NECROLOGY

JOHN B HATTON, M D, Des Moines, Iowa, died August 7 Dr Hatton was born in an Indian camp in Monroe county, Mo, July 7, 1839, the last of thirteen children When 17 years of age he entered a subscription school, paying his tuition with money earned from working on a farm Later he began the study of medicine under the instruction of his brother Afterward, in the winter of 1859-60 he secured the advantages of a lecture course in the College of Physicians and Surgeons at Keokuk, Iowa While thus preparing himself the Civil War occurred and he enlisted in Company F, Thirty fourth Iowa volunteers, and was elected first lieutenant of the company Oct. 15, 1862, he was mustered into the service and commissioned as first lieutenant. The regiment took a prominent part in the three days' fight at Chickasaw Bluffs, Miss, under Sherman, later in the great battles about Vicksburg, and was present at the surrender of Pemberton and his army, July 4, 1863 Afterward the regiment participated in the battles which ended in the capture of Forts Gaines and Fisher Dr Hatton was made assistant-surgeon, and when the captain of his company, being wounded and unable to retain command, resigned, he was appointed to the place in November, 1864 He located in Des Moines in 1890

RICHARD M SWEARINGEN, M D, New Orleans School of Medicine 1867, and Louisville Medical College 1886, died at his home in Austin, Texas, August 7, in his 60th year He was State Health Officer of Texas for twelve years For his efficient service during the yellow fever outbreak on the Gulf coast in 1897, he will be long remembered, notwithstanding his unmerited unpopularity with the business community

JOHN H PICKETT, M.D, Buffalo, N Y, 1865, died August 9, in Elizabeth, N J, of which city in 1884 he was a defeated candidate for the mayoralty He was a war veteran, prominent in temperance circles and until his health failed was a surgeon of the N J Central Railroad His wife died several years ago, and so far as known he has no living relatives

CARL E ELSNER, M D, Halle, 1874, died at his home in New York City, August 8, after a lingering illness He was a surgeon in the German army and received the Iron Cross for skill and bravery during a campaign A resident of this country for the past twenty years, he achieved more than an average success

THOMAS J DOUGHTY, M D, University of Michigan 1896, Health Officer of Fishkill and Matteawan, N Y, died at the home of his father, Dr John H Doughty, August 2 He was aged about 31 years

WARREN KEMBLE, M D, College of Physicians and Surgeons, N Y, 1868, of Saugerties, N Y, died there August 10, aged 57 years

E GERTRUDE CRUM, M.D, Assistant Physician of the Binghamton (N Y) State Hospital for the Insane, died August 5, aged 31 years

JOHN H BAILEY, M D, Sturgis, Ky, July 30, aged 28 years ——Frank Hamer Brickell, M D, New Orleans, La, August 8, aged 41 years ——William McGregor, M.D, of the McGregor Hospital, Sioux City, Iowa, August 5 ——J D Martin, M D, Savannah, Ga, August 3, aged 40 years ——E G Moore, M D, Spring Valley, Ill, August 11 ——Ambrose Morrison, M D, Nashville, Tenn., August 3

BOOK NOTICES

Wounds in War The Mechanism of their Production and their Treatment By Surgeon Colonel W E STEVENSON, Professor of Military Surgery, Army Medical School, Netley, England Pp 588 8vo, profusely illustrated New York William Wood & Company Muslin, $4 00 net.

The author says truly in his preface "that no branch of surgery has undergone more important changes in consequence of the teachings of Lister and Pasteur than that of gunshot wounds "

There are fourteen chapters, divided as follows 1 Introductory remarks on wounds by side arms, rifles, portable firearms and the mechanics of projectiles 2 Characteristics of injuries produced by projectiles, 3 The primary phenomena and symptoms accompanying gunshot wounds (such as shock and hemorrhage) 4 Treatment of wounds in war 5 General treatment of the bullet wounds 6 Gunshot wounds of joints 7 Gunshot wounds of hip joints 8 Gunshot wounds of the diaphyses of long bones 9 Wounds of the head 10 Wounds and injuries of the chest. 11 Wounds and injuries of the abdomen 12. Injuries of the pelvis 13 Defects and use of modern small arms in the wars of the future 14. The Geneva Convention

The illustrations in the volume comprise a good many photographs showing the effect of gunshots The recognition of American authors is full and complete, the lamented Otis being frequently quoted and at length Senn, Nancrede, McGraw, Marion Simms and the late Charles T Parkes are mentioned frequently In regard to Otis the writer says "I have frequently availed myself of that inexhaustible source of information on this subject, 'The Surgical History of the War of the Rebellion' in the United States, by G A Otis, a work which must continue to be a record of labor and research which may never be surpassed " Notwithstanding the generous praise given by the author to his predecessors, he has ample reason for having opinions of his own on most subjects and indeed does not hesitate to modestly express them.

The author points out the infrequency of amputations in these latter days, but our military brethren will see nothing about the effects of the Mauser bullet although there is an abundance of material on others of the same class

The work is of great value, not only to military but to civil surgeons as well

Manual of the Diseases of Children By JOHN MADISON TAYLOR M D, and WILLIAM H WELLS, M.D Illustrated Pp 473 Philadelphia P Blakiston's Sons & Company, 1 Price $4.00 net

This is not claimed to be an

eases of children, although if it had been so claimed, the claim would not have been far out of the way, as it seems to contain all the essentials, and the aim of the authors has been to present in a clear and precise manner the chief points Pathology has been abbreviated, not because this most important division of the subject is not valuable, but for the reason that in so small a work there is not surface room to adequately describe the constantly increasing discoveries in this direction

There are twenty chapters which cover in a general way the physiology of the infant in childhood, diseases occurring at or near birth, general hygiene of infants and children, feeding and food, the breeds of cows best adapted for infancy feeding, diet of children, artificial foods, recipes, etc, diseases of the peritoneum, diseases of the liver, diseases of the genito urinary system, diseases of the genital organs, diseases of the blood, diseases of heart, respiratory organs, nervous system, diseases of the acute infections, diseases of the skin, physical development, diseases and accidents requiring surgical procedures The book is well written and up to date

International Clinics A Quarterly of Clinical Lectures By JUDSON DALAND, M D, J MITCHEL BRUCE, M D, DAVID W FINLEY, M D Volume ii, 8th series Pp 363 Philadelphia J B Lippincott Company 1898

These clinics are very useful and the present volume contains clinical lectures on subjects of current interest to the profession The contributors to the volume are A H Freeland Barbour, M D, A L Benedict, M D, S S Bishop, M D, B S, LL D, William C Boteler, M D, James Cantlie, M B, F R.C S, J. H Claiborne, M,D, Henry Clark Coe, M D, E Treacher Collins, F R C S, Floyd M Crandall, M D, Charles Green Cumston, M D, James Mackenzie Davidson, M D, Prof C A Ewald, L Webster Fox, A M, M D, Louis Frank, M D, J McFadden Gaston, M D, A Pearce Gould, M S, F R.C S., Professor Grancher, J N Hall, M.D, B C Mirst, M D; W W Keen, M.D, John A Larrabee, M D, Alexander McPhedran, M D, W Milligan, M D F W Mott, M D, T Pickering Pike, F R C S, A Pinard, M D, Prof Albert Robin, A D Rockwell, M D, William L Rodman, M D, J T Schamberg, M D, N Senn, M D, John Lindsay Stevens, M D, Prof R. Von Jaksch, W Hale White, M D, Frank C Wilson, M.D, James K. Young, M D

It will be seen by the list of names and the special articles by each, that medicine, neurology, surgery, gynecology, obstetrics, ophthalmology, laryngology, pharyngology, rhinology, otology and dermatology have able representatives As clinicians the ability of these teachers is well known, and the fortunate possessor of this book, if he draw on his imagination very little, can easily imagine himself once more in the amphitheater reviewing the scenes but not the teachings of his youth The popularity of these volumes has been immense and it is not likely that there will be any falling off in the interest which attaches to them

The Office Treatment of Hemorrhoids, Fistula, etc, without operation, together with remarks on the relation of diseases of the rectum to other diseases in both sexes, but especially in women, and the abuse of the operation of colostomy By CHARLES B KELSEY, A M, M D 12mo, cl 68 pages Price 75 cents, net New York E R Pelton, 1898

The contents of this volume are The Cure of Hemorrhoids, Fistula, Fissure and other Affections of the Rectum by Office Treatment without Operation On the Relation between Diseases of the Rectum and other Diseases in both Sexes, but especially in Women On the Abuse of the Operation of Colostomy, or the Formation of an Artificial Anus

Anything written by Doctor Kelsey on subjects with which he has been so many years identified will always receive attention Doctor Kelsey has proved that a great many cases of hemorrhoids and fistula can be treated without surgical operation and this little book contains three lectures that set forth his methods The charlatan has too frequently had a monopoly of operations "without the knife or ligature," and the author has done well in giving the legitimate profession the means of accommodating those of their clients whose fear of operative measures is likely to lead them astray

Electricity in the Diagnosis and Treatment of Diseases of the Nose, Throat and Ear With 16 illustrations By W SCHEPPEGRELL, A M, M D Pp 403 New York and London G P Putnam, Sons, 1898 [from A C McClurg & Company, Chicago] Price $4.50

The illustrations in this book are fair, and the printing is well done The book is printed on good paper

The use and application of electricity has been retarded largely by reason of the extravagant claims made for it at the outset. These have now become circumscribed and the exact field of electro therapeutics more clearly defined In effect, while the claims have become more trustworthy, the use of electricity in medicine has become greatly extended and it is believed now by many, that, so far as electro-therapeutics is concerned, notwithstanding its occasional brilliant results, it is now only on the threshold of what it will become in the future

Exercises in Practical Physiology By AUGUSTUS D WALLER, M D, F R.S Part 3 Physiology of the Nervous System, Electro Physiology Pp 80, 91, bds London Longmans, Green & Company 1897

We have already noticed the first and second parts of this physiology, and this volume is a continuation of the series and gives full directions for the carrying out of experiments in the physiologic laboratory on the physiology of the nervous system There are sixty eight demonstrations in this work

Atlas and Epitome of Operative Surgery By Dr OTTO ZUCKERKANDL Authorized translation from the German Edited by J CHALMERS DACOSTA, M.D With 24 colored plates and 217 illustrations in the text. Pp 395 Philadelphia W B Saunders 1898 Price $3 00 net

This Atlas is a valuable one The selections are judicious This book is a very fitting companion piece to the surgery of the translator, which was issued about the same time and which is elsewhere noticed

Tropical Diseases, A Manual of the Diseases of Warm Climates By PATRICK MANSON, M D, LL D (Aberd), London Pp 625 12mo Illustrated by 88 wood engravings and two colored plates New York William Wood & Company Muslin, $3 50 net

Dr Patrick Manson, the author of this book, has had a special opportunity for observation of the tropical diseases, especially in China, where his various papers have been published from time to time in the medical reports of the *Imperial Chinese Customs Gazette* and have been of great value and peculiar interest To Manson is due, more than to any other, the establishment of the fact that the mosquito is the intermediate host of the *filaria nocturna* Few have had better opportunities for observation of the filarious diseases than Dr Manson, and he has made very good use of them

A careful review is given, in the book, of the unclassified fevers of the tropics Beriberi, leprosy and yaws receive full attention

Just now, when the eyes of many medical men are turned toward the tropics, this volume will prove very interesting and instructive

A Practical Treatise on the Diseases of Women and Their Treatment by Electricity Third edition, revised, rewritten and greatly enlarged By G BETTON MASSEY, M D Illustrated with twelve full page original chromo lithographic plates in colors, numerous full page original plates of photographs taken from nature, and many other engravings in the text Royal octavo 400 pages Extra cloth, beveled edges, $3 50 net. New York, Philadelphia and Chicago The F A Davis Company 1898

The work of Dr Massey as completed gives a fair résumé of the teachings of the day in regard to the use of electricity in gynecology It will be especially welcomed by those who limit the field of operative surgery in gynecologic cases, in some of which electricity sometimes exerts a wonderful influence Heretofore the electricians have seemed to claim too much for their favorite agent. That it has a distinctly enlarging scope there is no doubt The work under consideration is conservative and well written

A Primer of Psychology and Mental Diseases for the Use of Training Schools for Attendants and Nurses and in Medical Classes By C B Burr, M D Second edition, thoroughly revised Pp 116 Philadelphia, New York and Chicago The F A Davis Company, 1898

This book is a general guide to the management of cases of insanity, and contains also a valedictory address delivered to the class of 1895, Training School for Attendants of the Eastern Michigan Asylum It is well adapted for the use of junior medical students as well In the management of cases the author's advice is sound and judicious Many of the precepts laid down by him are worthy to be engraved over the doors of the wards of asylums so that they might be ever present to the attendant.

A Manual of Surgery for Students and Practitioners By William Rose, M B , B S Lond , F R C S , and Albert Carless, M S Lond , F R C S Pp 1162 8vo Profusely illustrated by wood engravings New York William Wood & Co , Publishers Extra muslin $5 00 net, leather $5 75 net

This work is intended to be a complete treatise on surgery, in a single volume, and its principal author is well known in this country as a distinguished operator We have examined this book with much pleasure and take pleasure in commending it We recognize a number of old timers among the illustrations, but for the most part they are new We commend the work and predict for it considerable popularity in this country

Manual of Physical Diagnosis, for the use of students and physicians, by James Tyson, M D Third edition, revised and enlarged Colored and other illustrations Pp 179 Philadelphia P Blakiston's Son & Company, 1898 Price $1 50 net

This manual has not been changed especially from the last edition except in the sections on examination of the blood and the chemic examination of gastric contents A number of new illustrations have been introduced together with other additions of a minor character, all adding to the accuracy and usefulness of the book

Prof Tyson is too well known as a careful observer and skillful clinician for us to do more than mention his name in connection with a work, to give it sufficient praise

Ovariotomy and Abdominal Surgery By Harrison Cripps, London, J & A Churchill, 1898 [Philadelphia P Blakiston's Son & Company Price $8 00 net]

The author says, "the chief object of this work is to record only such operative details as I have found valuable in my experience, that without the book running into a larger scope than was intended, it is impossible to describe in detail the various methods adopted by other operators" Cripps has been known in this country many years, by reason of his bold and original methods of operating Cases are given in the latter end of the book, and the operator who follows Cripps' methods will make few mistakes

Manual of Modern Surgery General and Operative By John Chalmers DaCosta, M D With 390 illustrations Pp 911 Philadelphia W B Saunders 1898 [From W T Keener, Chicago Agent]

This is a much better book than its predecessors It will be found concise and entertaining, as the book is not padded, but contains the essentials of the practice of surgery The methods recommended are up to date

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Accessory Nipples.—Accessory nipples were noted in 10,000 out of 115,000 recruits examined recently in Germany, according to a communication in the *Progrès Médical* of June 25

MISCELLANY

Inherited Tabes—Kalischer reports simultaneous cases of tabes dorsalis in mother and son of 21 years, without a trace of syphilitic antecedents in either —*Berlin Klin Woch* No 18

Cholera in India—Between Monday morning and Friday night, says a dispatch from Madras, August 13, there were fifty five deaths from the disease, the fatalities prior to the day first mentioned having been 117

The School of Medicine of Georgetown University, Washington, D C , is now a full fledged day school, the last evening classes being held last year On August 15 the new hospital, under the control of the school and having accommodations for thirty patients, was opened, in connection with which there is an emergency and dispensary service

Modern Bullet Wounds—"The destructive character of the bullets when they strike a hard surface, was shown in the wounds treated during the recent riots in Milan," states the *Klin Therap Wochenschrift* of June 26 "Every arm or limb wounded had to be amputated , every person shot in the trunk died, and whenever the skull was struck, the top was lifted up like the cover of a box and the brain matter scattered around"

Creation of an Articulation—Ollier reports unexpectedly successful functional results in a case in which the upper end of the humerus and scapula had already been removed He created an articulation by fastening the clavicle to the floating upper end of the humeral diaphysis, modifying with a few stitches the points of insertion of the deltoid and scapula muscles to adapt them to the new articulation, which works remarkably well —*Echo Méd du Nord,* June 19

An International Lepra Archiv—A lepra archiv is to be established by a committee including E Besnier, K Dehio, A Hansen, J Hutchinson and A Neisser It is intended to contain all administrative and legislative measures in regard to leprosy as well as scientific communications in the three principal languages The sympathy and coöperation of all interested in the subject are most cordially requested

Traveling Professorships—An anonymous benefactor has presented the Paris University with funds sufficient to endow for a term of years five of the professors "agrégés of secondary instruction" with 15,000 francs each for a trip around the world, a knowledge of English the only condition Another endowment provides an income of 2,000 francs to be loaned to needy French or foreign students, the amount to be returned later without interest

Cerebral Neoplasms—Krauss in the *New York Medical Journal* for July 30, considers the classic symptoms of brain tumor in their order of importance as 1, head pain , 2, optic neuritis , 3, mental apathy , 4, nausea and vomiting, and 5, paralysis as a special localizing symptom The early symptoms are headache, incapacity for mental work, disordered digestion, nervous irritability, and a general malaise Choked disc or optic neuritis he considers almost pathognomonic of cerebral tumor and a decisive symptom.

Alcohol Injections in Cancer—In the *Philadelphia Medical Journal* of May 28, Kuh makes a second contribution to this treatment He reports cases and discusses the work of Hasse of Germany, in curing fifteen out of eighteen well authenticated breast cancers He believes one may safely begin with 30 per cent. injections, increasing to 40 or 50 per cent , as the tolerance of the patient permits He says that in cases in which the growth has become adherent to the pectoral muscle, Hasse always advised the operation, followed by alcohol injections, and again, all relapses should be treated or [illegible] by the injection method, as the p[illegible] of relapses is too well known to

"Journal of Tropical Medicine"—It is proposed, if enough support can be obtained for the scheme, to publish in London a monthly journal dealing with the diseases of warm climates, to be devoted to the publication of papers on tropic diseases and to the discussion of subjects scientific and practical affecting the interests of medical men in tropic and subtropic climates The annual subscription, including postage, is to be 17s We wish the promoters success in their new venture They deserve it, for there is no country which has such a large interest in the tropics and the diseases common to them as our own

Longevity and Wine.—According to *La Médicine Moderne*, red wines are preferable to white because the consumers of the former live longest A viticulturist of the Gironde bethought himself to carry out an investigation as to human longevity in white and red wine districts respectively, taking as his basis the electoral lists in the various departments Among 7738 electors domiciled in a red wine country he found 381 individuals who were more than 75 years old, whereas among 3029 electors belonging to a white wine country there were only eighty one, an appreciable difference Yet red wine is more easily adulterated than white wine —London *Lancet*, July 16

Recovery from Traumatic Tetanus—Davis (*Annals of Surgery* for August) reports two cases of recovery from traumatic tetanus after the use of antitoxin The first case received forty two doses in eighteen days, the second twenty eight in twelve days Sedative drugs were used in addition to the antitoxin, but he believes that this does not destroy the value of the evidence for antitoxin In the first case symptoms arose one week after its reception and during the next week had not progressed further than having pain in the cheek, throat, back and neck, with contraction of the facial muscles, difficulty in swallowing, inability to fully open the mouth and a slightly staggering gait. The second case on entering the hospital was having three to eight spasms hourly, the injury having been received three weeks previous to admission, and his symptoms had been present for a week

Epilepsy—According to the latest views, epilepsy is a complex of symptoms proceeding from a diseased condition of the cortex, induced by three factors, hereditary and personal tendency and a periodically recurring, exciting cause, evidently toxic substances periodically accumulating in the organism from abnormal metabolic processes The nature of these toxic substances is still undetermined, in certain cases it seems to be the ammonium carbaminate derived from the urea These views indicate the importance of dietetic and therapeutic measures to control the metabolism and promote the elimination of the toxic substances, while they still maintain the value of the bromids and quieting remedies They also point out the lines for further research —*Munich Med Woch*, June 28

Endarteritis of the Renal Arteries—Drs Bradford and Lawrence have made a joint research on this subject and report an illustrative case in a hospital patient, a female, aged 36 years, suffering from anuria history mainly negative, anemia and weakness, but no dropsy, headache, sickness or convulsions, intellect clear to the last The cortex of each kidney was found bright buff colored, and sharply defined from the pyramids, microscopically the convoluted tubules were seen to be necrotic This necrosis was due to thrombosis of all those branches of the renal artery which had reached an approximate diameter of 100 μ evidently of the so-called "interlobular" arteries, all branches of the renal arteries were extensively diseased the media and especially the intima being thickened and sclerosed The interstitial tissue of the kidneys was not increased The patient thus presented the typic clinical picture associated with "obstructive suppression," while the morbid appearances were such as should, according to theory, have given rise to uremia The authors hold that this case throws grave doubts on the view held by many, "that uremia is independent of the mere retention of normal but toxic products that ought to be excreted" The case also shows the independence of renal endarteritis and extensive renal cirrhosis —*British Medical Journal*

Gunshot Injuries of the Spine—Prewitt (*Annals of Surgery* for August) divides gunshot injuries of the spine into three classes 1 Those that simply fracture the arches 2 Those that invade the canal, crushing the cord and damaging the vertebræ 3 Those complicated by serious injury to abdominal or thoracic viscera As to the first class, he advises immediate treatment by laying open the track of the wound under most rigid antisepsis, as do most surgeons Although most of the second class cases are fatal sooner or later, he believes that the dangers of myelitis and meningitis, with a prolongation of the lives of some, even though paraplegic, will follow the cleaning and disinfecting of the wound Of the third class he says "The presence of complications due to the penetration of the great cavities and injury of the viscera will influence the question of operation, but not necessarily forbid it."

Hysteric Joints—Moore (*Annals of Surgery* for August) writes on "Hysteria from a Surgical Standpoint" and says that it is in joint and spine ailments that the surgeon is most likely to meet with hysteria, and it is of so frequent occurrence here and often so closely reasembles the real disease that he must ever be on his guard lest he mistake the shadow for the substance These hysteric joint affections sometimes so closely resemble tubercular joints as to deceive very good diagnosticians, and usually follow an injury While there may be slight atrophy, it is only that due to non use or bandaging There is no rise of temperature, though it may be subnormal, and while there may be slight puffiness about the joint, there is no marked swelling The restriction of motion is different from that characteristic of tuberculosis, varying from one moment to another and even temporarily disappearing when the patient's attention is directed elsewhere The muscular spasm is very different from that of tuberculosis, it being more marked and voluntary The hysteric joint is usually deformed and the deformity often greatly exaggerated The deformity is apt to be a flexion As a treatment he has obtained the best results by reducing the deformity, holding the limb in proper position for a short time and insisting that a cure has been wrought, very little anesthetic being necessary

Pulmonary Tuberculosis.—Stubbert (*New York Medical Journal* for July 30) in discussing "Sanitarium Treatment of Pulmonary Tuberculosis," says that the cured incipient cases are estimated at 59 per cent, statistics being compiled under the most favorable circumstances obtainable in properly conducted sanitariums He considers the first essential in a sanitarium a routine examination in all details, basing treatment upon climatic, hygienic and dietetic influences He considers diet an all important factor and increase of weight a prognostic factor of great importance At the Loomis Sanitarium all patients, unless temporarily excused, are required to remain out of doors eight hours a day, and within a month after arriving the majority of their patients are able to walk from one to seven miles a day and they do it. The room temperature is not allowed to be over 65 degrees during the day and all windows are left open at night. As to the advantages of serum treatment, he says "1 It does not tax the function of digestion or produce gastritis, diarrhea or loss of appetite 2 In cases wherein the bacilli have disappeared, they have been lost while *sputa were still present*, whereas in creosote cases the last specimen of sputa contained bacilli 3 Up to the present time no relapses have occurred among our patients declared *cured by* serum treatment, they are occasionally met with in creosote cases " The writer claims to treat about an equal number of patients with tuberculosis, in the sanitarium and out of it, and from his experience has found that all incipient cases do better within a sanitarium, i e, one built on the cottage plan, a smaller percentage do well outside Statistics show that about 86 per cent. treated in a sanitarium improve, but only 58 per cent outside, and that in 41 per cent. the disease is arrested and cured within, but in a less percentage outside In far advanced cases he believes the patients are better off at home

Defective Compensation in Heart Troubles—Defective compensation in heart troubles is best remedied, according to the experience of Prof H Eichhorst of Zurich, with a combination of digitalis and diuretin (double salicylate of sodium and theobromin) It is indicated in every case, he states, that is not cured by absolute repose A course of thirty powders will completely cure the edema and concomitant disturbances in nearly every case There is sometimes a peculiar somnolence, with dyspnea and psychic troubles, but these are caused by the absorption of the edema and not by the medication, and subside as the noxious substances are gradually eliminated through the kidneys Formula pulverized digitalis leaves, 10 centigrams, diuretin, 1 gram, sugar, 30 centigrams For one powder Make xii Take three a day after meals —*Semaine Méd*, June 29

Insomnia—In the *Maryland Medical Journal* of July 23, Bond writes on "The Therapeutics of Insomnia," defining insomnia as "Any deficiency in sleep which threatens to interfere with health." He considers too shallow sleep with dreaming, or a sleep that leaves one tired on waking, forms of insomnia, and believes that testimonials of the sleeper as to how much he sleeps are necessarily questionable, therefore the first thing in the treatment is to find out whether insomnia is really present. In either case treatment must be given, in the former, tonics until the patient forgets his alleged insomnia, in the latter, hypnotic agencies He says "The physician's duty is not so much to compel as to secure permission for sleep The hindrances to sleep proceed usually not from the brain itself, but from a disorder of the blood, and this usually from abnormal processes in the kidneys and other excretory organs and in the digestive tracts, or perhaps from the inhalation of impure air Although it is very dangerous to prophesy limitations to the progress of any science, yet I may venture to say that progress in hypnotic therapeutics will be along the line, not of a discovery of a universal ideal hypnotic drug, but of a more thorough study of the varying conditions in insomnia and of the circumstances which favor or hinder the effect of each drug "

Management of the Tuberculous Insane—Dr Bracken, Secretary of the State Board of Health of Minnesota, writes on the above subject warmly recommending a larger adoption of the principle of isolation at hospitals for the insane of tuberculous patients, and says further "The greatest scourge of these institutions is tuberculosis, and there is a certain degree of apathy among physicians having charge They do not recognize the etiologic relation between phthisis and insanity I am convinced, however, that such causative conditions can be shown in not a few hospitals The American Public Health Association has, by the report of its Committee on Restriction of Tuberculosis, pointed out the means of limiting the spread of this disease By the adoption of these means the percentage of tuberculous deaths to the general death rate in one hospital has been reduced in the course of three years from an average of 25 per cent to a fraction under 9 per cent I was interested in this hospital report from Dr Rohé of the Maryland hospital at Catonsville, and wrote to Dr Wade, his successor, to learn the present condition of the tuberculous patients He informs me that the death rate from tuberculosis for 1896 was but 6 1 per cent Dr Wade describes the manner of caring for the tuberculous insane in this hospital as follows 'The sputa of the suspected case is examined, and if the bacilli are found the patient is placed in a single room, the walls of which are painted and can be easily disinfected The furniture consists of an iron bedstead, which is readily cleaned There are no curtains to the windows and no carpet upon the floor The patient is persuaded, if possible, to expectorate into a vessel, which is disinfected with mercuric chlorid If the patient expectorates about the room no harm can be done, however, as everything can be readily washed with a disinfectant The bedding is properly cared for and is used for no other bed After the death of the patient, the room and all of its contents are thoroughly disinfected ' " —Transactions Conference of State and Provincial Boards of Health

Diet for the Sick in Army Hospitals—So much has been published in the daily press about the unsuitability of the army ration as a dietary for sick soldiers, that the War Department has practically freed the kitchens of general hospitals from any need to rely on the coffee, hard bread and bacon of the ration Up to this time the hospitals were entitled to one ration per day for each patient Such articles of the ration as were required for use were drawn from the Subsistence Department in kind, and the money value of the articles not drawn was available as a hospital fund for the purchase of other articles of food from the Subsistence Department or from outside parties General orders just published authorize surgeons in charge to expend 60 cents a day per patient for the subsistence of the sick in their wards This is simply a commutation of the ration as a whole instead of the commutation of that part of it not drawn in kind, but as the new orders commute the ration at a much higher figure than its actual value, it gives ample facilities for providing all sorts of delicacies for the sick and for rendering them independent of the charity of the various relief associations The orders are as follows Medical officers in charge of general hospitals, hospital trains, hospital transports and the hospital at the camp at Pablo Beach, Florida, and at the hospital at the camp at Montauk Point, New York, will be allowed to expend from the appropriation "Subsistence of the Army," for the diet of the enlisted men undergoing medical treatment under their charge, at the rate of not exceeding 60 cents per man per day for the period each is undergoing treatment. The allowance so made will constitute a special fund in the hands of the medical officer in charge, from which will be purchased the entire diet of the enlisted men while undergoing medical treatment These purchases will be restricted to articles of food, solid and liquid, the quantities and varieties of which will be determined by the medical officer in charge Chief commissaries of departments will transfer to medical officers in charge such subsistence funds as may be estimated for by the latter for carrying out the objects of this order There will be rendered monthly to the Commissary General of Subsistence, by the medical officers concerned, regular accounts current supported by vouchers showing the application of these funds and regular returns of subsistence stores accounting for the articles of food purchased and issued There will be submitted with each monthly return a tabular statement showing the number of patients present during the month as shown by the hospital records, and the money value of the articles issued to and consumed by them The statement will be so arranged as to show the actual cost of subsistence per man per day for the month Transfers of subsistence funds from one hospital, train or transport to another without authority of the Commissary General of Subsistence, and the purchase from subsistence funds of articles other than food intended for diet of the sick are prohibited This order will go into effect at once, and all surplus funds in the hands of medical officers in charge, arising from the commutation of rations heretofore allowed to enlisted men undergoing treatment under their charge, will be taken up on their accounts current for the month of August, and all articles purchased from such commutation re [illegible] on hand unconsumed on [illegible] t hereof [illegible] taken [illegible] turn of su[illegible] for [illegible]

Medical Supplies Recommended to Regiments —Memorandum of recommendation of Surgeon General, April 15, 1898, to the Adjutant-General Each regiment to take two ambulances, four extra litters, a field hospital for ten men, medical and surgical chests, field supplies for three months Infantry regiments to have a steward or acting steward and ten privates of hospital corps Cavalry regiments to have two stewards or acting stewards and fifteen hospital corps men A light battery to have one ambulance, field hospital for five men (one hospital tent), an acting steward and five privates of the hospital corps

April 20, 1898, the Surgeon General sent instructions to Major B F Pope, chief surgeon, Tampa, Fla , directing him to inspect the medical department of each regiment upon its arrival, and report to him the deficiencies in medical supplies

CONSOLIDATED LIST OF MORE IMPORTANT ARTICLES SENT TO TAMPA AND SANTIAGO

First aid packets	No	39 000
Alcohol	Qt bottles	3 502
Bicarbonate of soda tablets	No	237,200
Calomel and soda tablets	No	40 000
Camphor and opium pills	No	188,000
Castor oil	Qt. bottles	1 422
Chloroform	0 2 ℔ bottles	3 470
Compound cathartic pills	No	259,200
Ether	0 2 ℔ tins	3 290
Fowler's solution	Oz bottles	1,180
Morphine tablets	No	17 300
Quinin pills	No	4,678 000
Strychnin tablets	No	50,000
Subnitrate of bismuth	℔ bottles	657
Antiseptic tablets	No	150 000
Carbolic acid	2 ℔ bottles	6,000
Iron, sulphate commercial	20 ℔ boxes	500
Lime, chlorid	℔ bottles	4 456
Sulphur in rolls	℔s	4 000
Formal gas generators with supplies for same	No	2
Beef extract	0 2 ℔ tins	5,790
Brandy	Qt. bottles	977
Condensed milk	tins	3 546
Soap castile	℔s	974
Soups (Franco-American), 24 cans in case	Cases	981
Sugar, white	℔s	2 868
Tea	℔s	495
Whisky	Qt. bottles	1,621
Stationery a large supply to cover needs		
Bandages gauze sterilized 144 in box	Gross	839
Cotton absorbent	℔s	1,240
Gauze, sublimated	Pkgs	33 000
Gauze, iodoform		3 650
Ligatures catgut, sterilized		18,600
Ligatures silk sterilized		18 600
Oakum	℔s	1 260
Sponges compressed cotton	Boxes	2 850
Thermometers clinical	No	211
Blankets gray		5,440
Chairs arm folding		235
Chairs small folding		2 350
Cots folding		4,250
Mattresses		2 500
Mosquito bars		3,750
Pillows feather		850
Pillows hair or cotton		4,250
Pillow cases, cotton		7 700
Sheets, cotton		10,000
Shirts, cotton		4 750
Tables mess folding		235
Tables bedside folding		2,350
Litters		630
Litter slings		975
Table and kitchen furniture, for field hospitals	for	3 000
Test tubes	No	1 540
Medical sets, chests Nos 1 and 2 each		29
Surgical sets chests Nos 1 and 2, sterilizer chest and filter each		21

NOTE —The regular regiments had each a medical and surgical chest litters and other field supplies before the above articles were issued

Societies

The following recent meetings are noted

Connecticut —New Haven Medical Association, August 3

Illinois —Douglas County Medical Society, Tuscola, August 4, Stephenson County Society of Physicians and Surgeons, Freeport, August 4, Vermilion County Medical Association, Danville August 9

Indiana —Shelby County Medical Society, Shelbyville, August 8, Vigo Medical Society, Terre Haute, August 4.

Iowa —Council Bluffs Medical Society August 10

Kansas —Topeka Academy of Medicine and Surgery, August 8

Kentucky —Union County Medical Society, Morganfield, August 1

Massachusetts —Berkshire Medical Society, Pittsfield, August 4

Michigan —Bay County Medical Society, Bay City, Aug 15

Minnesota —Southern Minnesota Medical Association, Rochester, August 4.

Missouri —Central District Medical Society of Missouri, Sedalia, August 4, Jasper County Medical Society, Webb City, August 2, Linn County Medical Society, Meadville, July 26 Putnam County Medical Society, Unionville, August 3

New York —Steuben Medical Society Addison, August 9

Pennsylvania —Bucks County Medical Society, Bristol, August 3, Lehigh Valley Medical Society, Allentown, August 9, Luzerne County Medical Society, Wilkes Barre, August 10, York County Medical Society, York City, August 4

Texas —Kaufman County Medical Society, Kaufman, Aug 1.

Wisconsin —Waupaca County Medical Society, Elwood, August 5

Philadelphia

OBSEQUIES OF DOCTOR PEPPER —The body of Dr Pepper reached Philadelphia from California August 5, and the remains viewed by only a few intimate friends On Saturday simple services were held at St. James Episcopal church, the interment being strictly private The honorary pallbearers were William Platt Pepper, General Isaac Wistar, Edward H Clark of New York, William Latta, Mayor Charles F Warwick, Dr S Weir Mitchell, representing the trustees of the University of Pennsylvania, Dr Jonas Tyson, representing the medical faculty of the University, Frederick Fraley, representing the American Philosophical Society, Joseph G Rosengarten, representing the Free Library, Ex Senator George F Edmunds, representing the Philadelphia Museums, P A B Widener, representing the Philadelphia Exposition Association, and Hampton L. Carson, representing the general alumni of the University of Pennsylvania, Governor Hastings was unavoidably absent Two provisions of Dr Pepper's will have been complied with, one of which was that his body be cremated, the other that his brain be given the Anthropological Society of which he was a member, the latter clause being one of the agreements on becoming a member Among others who have belonged to this society may be mentioned Dr Joseph Leidy and Phillips Brooks

SANITARIUM FOR CONSUMPTIVES —Some time ago the Board of State Charities made a recommendation appropriating $30,000 for the erection of a sanitarium for consumptives, with the proviso that a like sum be raised by private subscription Unfortunately this measure never passed the legislative committee rooms The overcrowded condition of the almshouse in Philadelphia would enlist the sentiment of the members if they would visit it, but this will not probably be done The Pennsylvania Society for the Prevention of Tuberculosis is again bringing this subject to the front and giving many good explanations of the benefit which would arise from the erection of a building for this purpose A location has been found in Lucerne County, and offered as a site for the proposed building A city sanitarium for the treatment of cases of tuberculosis is also being agitated

BRONZE STATUE TO DOCTOR PEPPER —The many societies and public enterprises of this city to which Dr Pepper belonged have all passed fitting testimonials to his memory Among others may be mentioned the Philadelphia Club, trustees of the Department of Archæology and Paleontology of the University of Pennsylvania, and a committee of the Philadelphia Museum Some time before his death the Department of Archæology and Paleontology of the University decided to erect a testimonial to his memory This testimonial will now give way to a memorial bronze statue by Bitter of New York, who will also carve the granite foundation on which the statue will rest. The figure represents the doctor in a sitting posture and in a pensive and characteristic attitude

DR JOHN GUITÉRAS HOME.—The excessive duties imposed upon Dr Guitéras while with the army in Cuba finally over came him and after being in bed for several days with the prevailing fever in the army, he returned home greatly debilitated on August 5 Questioned as to the most serious diseases which threatened the army at the present time, he stated that typhoid and malarial fevers were the worst foes yet encountered Up to the present time yellow fever had been of a mild type and but comparatively few deaths had resulted Regarding the report of differences between himself and the Red Cross Society, he dismissed it by stating that it was absolutely without foundation, and further remarked that "there was only one dispute of importance down there, and that occurred between the Spaniards and Americans "

An Interesting Case —It is reported that George H Wheaton, an employe of Cramp's shipyard, Philadelphia, recently fell from a scaffold, striking on his head and shoulders Not thinking his injuries serious he remained around the factory for some time but, subsequently, complaining of vague pains, was given permission to go home After crossing the Delaware river and reaching the opposite shore in Camden he walked for some distance, but became dizzy and was seen to suddenly fall He died a few minutes later On subsequent examination at the Cooper Hospital, Camden, there was found a fractured vertebra

Charitable Bequests —The following institutions have been made beneficiaries by the will of Jane K Barclay, who recently died in this city The Presbyterian Hospital, $5,000, the Home for Widows and Single Women, $5,000 By the will of Emily A Lippincott the following bequests have been made To the Hospital of the Protestant Episcopal church, $5,000, an endowment for a free bed, to the Children's Hospital, $2,500 In addition $2,500 was also given as an endowment for a perpetual free bed

Still Watching for Yellow Fever —If yellow fever enters this city it doubtless will come by means of railways The State Board of Quarantine is keeping a strict watch on all lines of boats and steamships which come to this port A recent resolution was passed to the effect "that on and after August 1, and until further notice, every vessel arriving here from Cape Henry shall be inspected at the Quarantine Station under a penalty of $500 " This city had enough of this disease in 1893

Health Report —For the week ending August 6, 484 deaths have been reported to the Board of Health. Of these 217 were children under five years of age Of the total number there is an increase of nineteen over the preceding week and an increase of seventy two over the corresponding period of last year Thirty deaths resulted from sunstroke Infectious diseases Diphtheria, 29 cases 10 deaths, scarlet fever, 17 cases, 1 death, typhoid fever, 59 cases, 19 deaths

Sunstrokes are Common —On July 30 there occurred in this city thirty cases of sunstroke This is the second largest number recorded this summer, the highest being in the earlier weeks of the month, when forty prostrations occurred It has been reported by the Weather Bureau that the past few months have been the hottest for thirty years Two suicides have occurred during the past week, superinduced, it is believed, by the intense heat

St Joseph's Hospital —While the physicians are off on their vacation, improvements are going on at the St Joseph's Hospital New operating, sterilizing and anesthetizing rooms will take the place of the space formerly utilized for this purpose, and when finished it is hoped that the new accommodations will take rank with the best of this city

Louisville

Kentucky School of Medicine —This college is once more before the public on account of internal dissensions As recorded in these columns some months ago, the majority of the Faculty declared the chairs occupied by Drs W H Wathen, M. F Coomes and Henry Orendorf vacant, asking the Board of Regents to ratify its action After a trial of the charges preferred, the Board refused to concur because of constitutional reasons and the last session was taught with all three as members of the Faculty After the conclusion of the term, the majority of the Faculty brought suit in the local court to dissolve the corporation and make the sale of the college property possible Pending this suit, which was docketed for the October term, the three members, Drs Wathen, Coomes and Orendorf, declared the chairs occupied by Drs C W Kelly and Sam E Woody, also dean, vacant, and their action was ratified by the Board of Regents, over the protest of the President of the Board, Mr Jos P Helm Drs Wathen, Orendorf and Coomes, in the absence of Dr J M Mathews and Dr J B Marvin, who were out of the city, then elected Dr Sam Cochran, professor of anatomy, vice Dr Kelly, and Dr Arthur G Boyd (*a graduate from the school in 1896*), as professor of chemistry, and proceeded to elect Dr W H Wathen dean and Dr H Orendorf as secretary Notice was served on the postmaster by both the factions, Dr Woody, who claims to have been illegally deposed from the deanship, and Dr Wathen, the new dean, to deliver all mail to them, but the postmaster, complying with the post office regulations, is holding all mail and marking it "in dispute " Dr C W Kelly is fishing in the northern lakes, Dr J B Marvin and Dr J M Holloway are in Europe, so it is not known what action will be taken

Mathews —Dr J M Mathews, president-elect of the American Medical Association, has resigned the position of professor of surgery and lecturer on diseases of the rectum in the Kentucky School of Medicine, and has accepted the same chair in the Hospital College of Medicine, having been elected to the latter position very recently He will divide the chair of surgery with Dr H. H Grant, holding the same title as before in the Kentucky School His resignation also carries with it membership in the Board of Regents of the Kentucky School Dr Mathews states he was led to make the change because of his dislike for such disagreeable occurrences as are now taking place in his former school

Executive Committee.—The Executive Committee of the Mississippi Valley Medical Association met at the Louisville Hotel on the evening of the 15th, transacting much important business

Anthrax —Several cases of anthrax have been discovered in a herd of milch cows in the lower end of the city, which has been quarantined by the State Veterinarian Some action will be taken by the State Board of Health against Indiana, where anthrax is said to be prevalent

Vacations —The following members of the local profession are away from the city Drs J B Marvin and J M Holloway, in Europe, Drs L S S McMurtry and C W Kelly, among the Canada lakes, fishing, Dr Wm Bailey, in Michigan Dr J T Dunn and Dr P B Scott have just returned from a sojourn in New York City

Cochran —Dr Sam Cochran, who recently resigned his position as local Marine Hospital Surgeon, is now lying critically ill with typhoid fever Dr Cochran has been making personal attacks upon Dr C W Kelly through his journal, the *Louisville Medical Monthly*, and both he as editor, and the publisher, have been enjoined by court to cease publication of personalities

Smallpox —Jackson, Ky, has another case of smallpox, on account of which the Teacher's Institute and the Circuit Court in session, were adjourned The Board of Health was compelled to build a pest house on a remote mountain point

Health Board —The Quarterly report of the Indiana State Board of Health, just published, shows some queer facts The total number of deaths for the quarter is 3368 Of these only six were caused by phthisis, one by pneumonia, and not a single death from typhoid fever There were 7165 births, with 3660 males, a decrease in the total number of 667 for a corresponding date last year There were 160 illegitimate births, 4952 marriages were recorded, 131 of the husbands being under 20 years of age

Nettleroth —Dr Alexander W Nettleroth has just received his commission as assistant surgeon in the army and has been ordered on duty with the First Army Corps at Chickamauga He was the second honor man of his class at the Louisville Medical College this year

Meyers —Dr Sidney J Meyers has returned from Chickamauga on sick leave of fifteen days, having contracted malaria while on duty there

Filtration —The Louisville water company has advertised for bids for construction of a filtration plant, which will be opened September 1 This means that Louisville will have within the next year one of the largest filtration plants erected by any municipality As recorded in these columns, the details of this plant are the results of experiments carried on by several patented methods at the waterworks pumping station under the supervision of experts employed by the water company This work consumed about two years, and the plan adopted is the American system, which has received the endorsement of many continental towns of Europe It comprises the sand process with a quick coagulant, the exact process, however, has not been announced by the company The new filtration plant will be 24 feet high, 392 feet long and 116 feet wide, built of stone and adorned The bidders for the work must give a bond of $100,000 and they are limited to residents of Louisville and Jefferson County.

Lay Opinion —The *Courier Journal*, in commenting editorially on the death of Rear Admiral Kirkland, refers to the surgery in his case as "one of those delicate surgical operations which have become so common within the last few years," the death of Admiral Kirkland "illustrating the fallibility of medical prognosis," going on to state that after an apparently successful operation one of the surgeons was quoted as expressing the opinion that the operation was highly successful and most satisfactory, and had it been postponed twenty four hours the illness would have proven fatal, yet in spite of this the patient sank rapidly and died two days later It is stated that this is one of so many deaths following operations that eminent surgeons in this country and Europe are lifting their voices in warning against reckless practitioners whose anxiety to perform capital operations prompts them to take enormous risks After this, and further condemnation of surgeons and surgical procedures, the article concludes with the following words "That in Admiral Kirkland's case the work was done only upon the most mature deliberation and as a last resort does not alter the truth of all this." From such articles as these and they are by no means infrequent, the laity form their opinion of surgery and refuse any surgical interference even when absolutely demanded

THE PUBLIC SERVICE

Movements of Army Medical Officers —Assigned to duty with the Second Army Corps Camp Alger, Va Acting Assistant-Surgeons Wm B Summerall from Atlanta, Ga , D T McKinney from New Brighton Penn and Alfred B Giles from Baltimore, Md. To Ponce Porto Rico via Fort Monroe Va Acting Assistant-Surgeon John N Goltra from Buffalo, N Y To General James F Wade as Chief Surgeon on his Staff Major J L Powell, Surgeon U S Army To duty with troops at Chickamauga Park, Ga the following acting assistant-surgeons Geo G Morris Victor E Watkins and Ernest W Fowler from Washington D C O C Heiss from Nebraska City, Neb , Robert L Bartlett from New York City N Y Geo H Calkins from Tonowanda, N Y , Henry B Stotter from Cleveland, Ohio, Frank E. Crossier from Lebanon Ohio and Robert C Rind from Towson, Md To duty with troops at Tampa Fla Acting Assistant-Surgeons Thos C Avery from Washington D C , and Elbert E Persons from Chicago, Ill To General Shafter at Santiago Cuba, via Tampa Fla Acting Assistant-Surgeons Henry H Bradley from Buffalo, N Y and Lewis B Childs from Washington, D C To the Commanding General, camp at Montauk Point, Long Island, N Y Major C L Heizmann Surgeon U S Army, and Major Robert Burns 1st New Hampshire Volunteer Infantry from Lookout Mountain Tenn To the General Hospital at Montauk Point, Long Island N Y Major Charles S Nancrede Brigade Surgeon from 1st Division, 2d Army Corps and Acting Assistant-Surgeons Frank C Jones from Cleveland Ohio, Harry C More from New York City, N Y and A R Booth from Washington D C To the General Hospital, Fort Thomas, Ky Major Wm R Hall Surgeon U S Army from the General Hospital, Key West, Fla to take charge To the Leiter General Hospital Chickamauga Park Ga Acting Assistant-Surgeons B R Shurly from Washington D C W C Berlin from Cleveland Ohio and John B Alwin from Athens, Ohio To the General Hospital Key West, Fla Captain Henry A. Shaw, Assistant-Surgeon U S Army from Key West Barracks, Fla To the General Hospital, Washington Barracks, Washington, D C Acting Assistant-Surgeons Wm J Ashby from Alexandria Va , and J R Shannon, whose former orders are revoked To the Hospital Train at Tampa, Fla Capt H A Shaw Assistant Surgeon U S Army To the General Hospital at Fort Monroe Va Lieut. Colonel A A Woodhull Deputy Surgeon-General U S Army To the General Hospital, Fort Myer Va Major Elmer E Heg Brigade Surgeon and Acting Assistant-Surgeon Harold W Cowper from Buffalo, N Y To the General Hospital, Fort McPherson Ga Acting Assistant-Surgeon James C Ross from Salt Lake City Utah To the U S Hospital Ship *Missouri* Major Wm H Arthur, Surgeon U S Volunteers to command To proceed to their homes Major Victor C Vaughan Surgeon 33d Michigan Vol Infantry, and Acting Assistant-Surgeon Frank Donaldson Resigned Capt John H Dickerson Assistant-Surgeon 9th Battalion Ohio Volunteers

A Sanitary Order from the War Department —The following was issued August 10 by the Adjutant-General *of the Army*

In order to prevent as far as possible the diseases incident to encampments of large bodies of men namely typhoid and malarial fevers, diarrhea and dysentery and the further spread thereof where these diseases have already gained more or less headway, all officers from the commanding general to company commanders will exercise the utmost vigilance to enforce proper sanitary conditions in camp and strict cleanliness of the person

The speedy destruction or removal with safety of all decaying substances present and future, and the rendering innoxious the feculent matter of the camp, must be accomplished

The Quartermaster's Department will furnish lumber for floors to all tents The general commanding camp will at once provide ample hospital facilities by erecting barracks where there is a shortage of hospital tents

No effort will be spared to carry this order into effect to the fullest extent, and to this end those concerned will not rest content with the issuance of orders upon the subject, but they or their representatives, duly impressed with this grave responsibility, will immediately see to the commencement, continuance, superintendence and practical accomplishment, day by day, of the instructions imposed upon the command

The attention of all concerned is called to Army Regulations concerning interior economy, police, and discipline of companies, to Circular No 1, Surgeon-General's Office, April 25, 1898, to "Marches" and 'Camping" in the authorized Drill Regulations, to "Soldier's Handbook" and the remarks therein compiled From these easily accessible data, supplemented by his own practical experience and that of others the commanding general of each camp will at once prepare and put into immediate execution a simple code of rules, of the daily practical accomplishment of which he will assure himself, rendering daily reports to the Adjutant-General of the Army

By order of the Secretary of War

H C Corbin, Adjutant-General

Promotions in the Marine Hospital Service —Passed Assistant-Surgeons to be Surgeons Cyrus T Peckham, Aug 10, 1898, Arthur H Glennan, Aug 10 1898 Eugene Wasdin, Aug 10, 1898, Stephen D Brooks, Aug 10, 1898, Joseph H White, Aug 10, 1898.

CHANGE OF ADDRESS

Bell, J W , from 2361 to 2301 S Bryant Av Minneapolis, Minn.
Blech, G , from 6236 S angamon St to 1443 Michigan Av , Chicago
Behle, W H , *from* Blackfoot, Idaho to Summit Blk , Salt Lake City, Utah
Campbell T F , from Springview, Neb , to Fairfax, S D
Cleveland C C , from 1215 W 23d St to 1215 W 33d St., Minneapolis
Emmerson R from Chicago to care of Mexican National R R , San Luis Potosi, Mexico
Gibben J H , from Philadelphia Pa , to Jefferson Barracks, Mo
Hatfield, M P , from Col Mem Bldg , to R 400 Reliance Bldg , Chicago
Hodges, F J , from Anderson, Ind , to Ashland, Ohio
Huecker, Jno , from Ferguson Bldg to 700 15th St , Denver, Colo
Herr, A W , from W odburn Iowa, to Battle Creek, Mich.
Hill, W H , from New Castle, Mo , to Gentryville, Mo
Hertzle, D from 251 Montgomery to 112 E. College St. Louisville, Ky
Jaquith, W A , from 1184 Wilcox Av , to 1375 W Harrison St., Chicago.
Klasen, J P , from Chicago to Huron, Ohio
Kempker, J F , from Des Moines to Houghton, Iowa
Lesan, C T , from Bedford to Mt Ayr, Iowa
Munson, S E , from Mt Pulaski to Rochester Ill
Morgan, R G , from 23 [illegible] Penn to Ind Med Coll., Indianapolis, Ind
Minard, E J C , from Brooklyn N Y , to Chicago, *Ill*
McCreery, R L , *from* University Park to 136 Grant Av , Denver, Colo
Maclean, D , from Detroit, Mich , to Hotel Chamberlin Fortress Monroe Va
Patterson, H A , from B hyfield to Downing, Ill
Pinto, A. S , from Omaha Neb to 3d Div , Hospital, Panama Park, Fla
Prather D J , from Oakland to Gen Del Sacramento Cal
Plummer, R W from Mt Vernon *Ill* , to Tyrone, Pa
Runde, F W , from St Louis, Mo to Room 9 McClintock Blk., Denver
Sandow B F , from Meih art to Helena, Mont.
Schauffler, E W , from 900 Main St. to 1220 Washington St , Kansas City, Mo
Stevens A M , from Ann Arbor Mich , to 143 E Berry St , Ft Wayne
Southard, W F from m 603 to 1220 Sutter St San Francisco Cal
Stone C A , from Veldon to Mason City, Ill
Smolt, C F , from Newton to Ottawa, Kas
Nashville, Tenn to Sherman, Texas
Savage, G H , from Ann Arbor to Corey Mich
Thoms, S J , from Chicago to 103 Congress St , Ypsilanti, Mich
Van Tuyl, H , from Ann Arbor, Mich , to 55 Hudson Av , Rochester, N Y
Van Urk, C H , from Ann Arbor to Adrian, *Mich*
Williams,
Woodbridge J E , from Chicago Beach Hotel to Fort Myer, Va

LETTERS RECEIVED

Allen D P , Cleveland, Ohio Alexander A J , Mayfield Ky American Therapeutic Co (2) New York City, Ascher, J A Cherry Creek, Nev
Bovinine Co , The New York City Bundy, J A. Iroquois, Ill Bredt & Co , J Chicago, Bullard J W , Pawnee City Neb
als J , Kansas City Mo.
Clement , T F , Philadelphia Pa Decker, Orlando, Santiago Cuba
Dagney , J D , New York City
Emmet ild Bros & Foster (2), New York City
Fairch ue, Geo Dayton, Ohio Guthrie J A Portsmouth, Va
Goodh H A Philadelphia Pa , Hirschwald'sche Buchandlung, Berlin,
Hare, y Hummel, A L Advertising Agency, New York City
German n, W B , Chicago, Jenkins, D J Huntsville, Ohio
Judson pson J F & Co , New York City, Kegel E T Walcott, Iowa
Kemp H Chas , St. Louis, Mo Kress & Owen Company New York City,
Klie tle, C. H , Piqua, Ohio, Lowder, R , Ledyard Iowa Lewis, Le Roy,
Litt n, N Y
Auburn rick, M B , Passaic, N J Magruder G T , Washington, D C ,
Mer onald, Geo C , San Francisco, Cal Massey G Belton Philadel
Macd Pa Moreland, W H , Manitou, Colo, Moss, H C , Albion, Ill ,
phia, F W Detroit, Mich Mercer, A Clifford Syracuse, N Y , Mac
Mann ne, R F (2), Queensboro I , N Y Mitchell, T E , Columbus, Ga
Farl ury, Frank S., Brooklyn, N Y Mogk, W A Ann Arbor Mich,
Milb ermith, S T , Denver Colo , Montgomery Liston H , Chicago More-
McD W H , Manitou Colo
land ewberry Library, Chicago, Norstrom, Henry, Boone, Iowa
N agels, Geo H , Columbus Ohio Physicians Outfitting Co. Kansas
P ds, Mo Patton, F W , St. Louis, Mo Payne T E Philadelphia Pa
City rsons, J W , Portsmouth, N, H , Parker Chas A Orange, N J
Pa Roosa D B St John (2), New York City, Robertson E H , Boulder,
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ORIGINAL ARTICLES

A CONTRIBUTION TO THE STUDY OF THE SYMPTOMS OF CHRONIC URETHRITIS

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The fact that a patient observes a persistent or occasional drop at the meatus, by no means proves that gonorrhea exists On the other hand, the absence of discharge does not exclude the presence of chronic gonorrhea *This fact alone warrants a detailed study* of the symptoms of this disease

At the outset, it is well to say that no attempt at considering the urethrites in general is made To extend this paper to the urethrites of a non-gonorrheal character would expand it beyond its intended dimensions Moreover, the urethrites, other than gonorrheal, merit exhaustive study by themselves

The separate consideration of gonorrhea infecting the region before or behind the compressor is due, like the vast majority of other advances in the study and treatment of genito urinary diseases, to the great master, Felix Guyon[1] This division into anterior and posterior urethritis is not only rational, but also the most convenient

In most cases the symptoms of this disease vary according to the region affected, an effort will here be made, in studying them, to place them where they belong But while attempting this, it will be found that there are symptoms which may show affection of either urethra To recite these separately would encumber us with a new division It seems better to adhere to Guyon's classification and while using it, to mention wherever applicable the local differentiation, so important in treatment

SYMPTOMS OF CHRONIC ANTERIOR GONORRHEA

1 *Agglutination of the meatus* —Some cases present, as the sole symptom of urethral disease, a mere cohesion of the meatus, most frequent on arising from sleep This may take the shape of a slight, transparent pellicle or a crust formed by the dried discharge When the discharge is so copious as to prevent its drying, it takes the shape of the morning drop, to be discussed farther on It is important to ascertain, microscopically, whether the substance that even but agglutinates the meatus is the result of a diseased condition, or whether it indicates merely an increased normal secretion, due to erection during sleep A particle of the "glue," pellicle or crust, rubbed with a drop of distilled water upon a cover-glass, will prepare it for examination But one such microscopic examination by no means suffices for diagnostic purposes For some reason the specimen taken one day may contain only mucus or perhaps urethral epithelium, while the substance that causes the lips of the meatus to adhere but slightly may after several examinations be found to contain gonococci

2 *The discharge*, like the agglutination, is often the only symptom which the patient observes Its appearance and persistent reappearance, even without any accompanying inconveniences, harass him It is difficult, without detailed study, to reach conclusions which will justify the physician in assuring the patient regarding the danger or innocuousness of this discharge

3 *Description of the discharges* —With a view to systematizing the description of urethral discharges, I beg to submit the following classification While it is by no means exhaustive, I think it has the advantage of carrying a definition in each title 1, thick bloody discharge, 2, thick green discharge 3, thick yellow discharge 4, thick white (creamy) discharge, 5, thick rice water (grayish, opaline) discharge, 6, thick watery discharge

The above discharges may vary or be mixed as regards consistence Any of them may be thin, carrying thicker drops, they may also be mixed as regards color, thus, there may be a greenish yellow discharge, or a yellowish-white one, etc

When the discharge does not flow freely from the meatus, it may be present as, *a*, the morning drop (small, medium or large), varying from a dirty gray even brownish tint to the colorless appearance of raw egg albumin, *b*, an excess of moisture, easily expressible from the meatus by stripping the urethra, *c*, an excess of moisture expressible *to* the meatus, *d* an excess that can not be expressed, but remains within the meatus and is visible only on opening its lips

4 *The abundance of the discharge* may vary in the same individual In most cases of chronic urethritis, it presents only in the morning before the first urination (*goutte militaire*) In others it becomes evident an hour or two after urination In others still, it appears only occasionally, as after fatigue, dissipation, the abuse of stimulants, etc

5 *Color of the discharge* —The morning drop especially may be creamy or yellow, or it may be grayish or opaline, or colorless

6 *Consistence of the discharge*—The discharge, drop, or mere excess of moisture in chronic gonorrhea may be as fluid as that of an acute specific urethritis, it may also be coherent, slimy and easily drawn out *into long threads when taken between the fingers*

7 *Stains on garments*—Very many patients see the sole evidence of di[illegible] their shirts And indeed, when th[illegible] ph[illegible] endeavor to strip from the ure[illegible]

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[1] Guyon Leçons Cliniques sur les Maladies des Voies Urinaires.

that produces these stains, they succeed in bringing only a slight excess of transparent moisture *to* the meatus, but not expressible from it Often these stains produce in the patient a greater disquietude than the discharge did, when it was evident Such patients use all possible means to impress upon the physician the presence of the stains. It is nothing unusual to have a patient bring quite a laundry package for ocular demonstration One of my cases wore his shirt a whole week, examined it almost hourly, and whenever he found a drop, encircled it with indelible pencil ring and marked it with the date and hour at which he discovered it It is not rare to have a patient cut the stained portion from the shirt and attach it to labels, giving the above data

8 *Relation between stains and discharge* —When drops are discharged from the urethra, the stains on the garments bear a color-relation to the urethral discharge As Diday has shown, a colorless drop gives the shirt a starch like stain, an opaline drop gives the shirt a grayish stain, a white drop gives the shirt a yellow stain, a yellow drop gives the shirt a green stain

9 *Urine stains* are sometimes confounded with the stains from urethral discharge To recall their gross differences, I tabulate them as follows

URINE STAINS	STAINS FROM URETHRAL DISCHARGE.
Irregularly shaped, diffuse	Circular or ovoid
Large, with undefined edges	Small, with sharply defined edges
Color of same shade through out	Center darker than periphery

10 *Diagnostic value of stains from urethral discharge* —While excellent authors, *inter alia* Guiard,[2] do not attach very great importance to the stains from urethral discharge, these certainly merit attention Thus the deeper in color and the greater in density a stain, the greater the likelihood of its containing gonococci, yet, a very light, starchy stain by no means excludes them

11 *Microscopy of the stains on linen* —When, for any reason, the patient can not be examined personally and it is necessary to prepare these stains for the microscope, it may be done by moistening the spot with distilled water, rubbing it upon a cover-glass and then drying, fixing, staining and mounting in the usual manner

In many cases the discharge is so slight that it will not stain the linen Then several hours must elapse before sufficient of the discharge accumulates to become at all evident in the meatus Or it may be so small in quantity that stripping of the urethra is required to reveal its presence In such cases the patient may not perceive it except after a night's rest, when it appears as the

12 *Morning drop* (*goutte militaire*) —This may show itself as a mere light drop of a pearly grey color, or through all the gradations to a very heavy, thick yellow drop In some cases it does not take the form of a drop, but dries upon the lips of the meatus, slightly agglutinating them or, if the quantity be larger, may seal them with a thick crust To obtain the drop for microscopic examination the patient must be examined before he has passed his first morning urine When this can not be done, he must be provided with cover-glasses, and instructed in catching the drop

13 *Absence of discharge* does not prove that the patient is cured What is called "latent gonorrhea" (Guiard, *Annales*, 1884) may exist, especially in the posterior urethra, with no symptoms whatever, except as manifested by filaments, flakes or granules in the urine I believe "residual gonorrhea" a more correct term for this condition The "floaters" found in the first morning urine should be fished therefrom with a sterilized platinum loop and examined microscopically If they can not be thus obtained, the urine may be centrifuged and the sediment examined

14 *Absence of "floaters"* may not prove a cure either *Ramonage* may then be advantageously employed with the other methods for determining the condition of the urethra, as described in another paper[3]

15 *Itching or tickling* within the urethra, is one of the most annoying symptoms of chronic urethritis It is especially aggravating when the symptom obtains in the posterior urethra It is then often referred to the rectum Such cases are subjected to all manner of treatment, even operations upon the anus and rectum, of course without relief The reflex nervous symptoms resulting from this urethral itching or tickling, not infrequently drive the patient to desperation In some cases the diseased area is so minute that its location is difficult even with the urethroscope In extremely small infected spots, or perhaps a single one, it may not be found at all Fortunately the vast majority of cases yield to dilatation and irrigations[4] In those few which persist, the urethra is prepared by this treatment, for more searching urethroscopy, until the diseased region can be brought to view

16 *Painful urination* is not frequent in chronic gonorrhea, except when the patient has rendered the urine abnormally irritating by dissipation, or increased the local disturbance in the same manner by coitus or over-exertion These may also reproduce the discharge or aggravate it, if present Equally a meatus agglutinated, or sealed with a dried discharge, may render urination painful The inflamed canal is distended to a painful degree, until the agglutination is torn away by the force of the stream The tearing of the incrustation from the meatus carries with it superficial and sometimes deeper epithelium, producing at first pain alone and later ulceration of the meatus, until every attempt at urination is as exquisitely painful as it was in the beginning of acute gonorrhea This can be avoided by teaching the patient to soak the meatus in a hot boric acid or very weak bichlorid solution, before urinating The urine in chronic gonorrhea presents symptoms of import in both anterior and posterior infection of the organ and may be considered with the latter

17 *The urethroscopic symptoms* of chronic anterior and posterior gonorrhea can not well be studied separately And indeed they require, for their proper comprehension, an essay devoted to them The only concise article on the subject that at present exists in English, as far as my knowledge goes, is the brilliant paper by H R Wossidlo[5]

18 *The urethrometic findings* of chronic anterior gonorrhea merit investigation in a paper limited to the diagnosis of the disease

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[2] Les Urethrites Chroniques chez l'homme 1898

[3] Valentine The Proofs of Cure in Gonorrhea ' Clinical Recorder, April 1898

[4] Valentine Chronic Gonorrhea its Scientific Treatment ' Clinical Recorder, January, 1898

[5] Wossidlo ' Practical Urethroscopy " Medical Record September 7, 189

I have in the preceding endeavored to sketch the symptoms most frequent in chronic anterior gonorrhea In doing so, I hope that the statement be not taken too strictly, as almost any of the symptoms can be simulated by disease of the posterior urethra

There are also a number of symptoms which can not be separately studied, these will therefore be associated with consideration of

THE SYMPTOMS OF CHRONIC POSTERIOR GONORRHEA

Posner[6] hopefully says that acute posterior urethritis can heal without any special, and particularly without any local, therapeutics This is fortunately true Still, in view of the fact that 33 per cent (Guyon and Jamin) to 85 or 92 per cent (Ambert, Erand, Hassler, Jadassohn Letzel, Audry) of anterior gonorrheas traverse the compressor and infect the posterior urethra, it will not be well to envelop ourselves too firmly in what too often proves fancied security Indeed it seems not remote that many of the sad results of residual gonorrhea are due to the fact of its lying unobserved in the posterior urethra, waiting, perhaps years, for the fitting occasion to become manifest The comparative difficulty with which the posterior urethra ordinarily can be reached, may leave many cases unobserved until much later, when the most eccentric manifestations may suggest that it once was infected Indeed, this infection in the acute stage may have been so insidious, as to be barely manifest, so that, to quote Guiard,[7] it may have been chronic at the very outset (*chronique d'emblee*)

19 *Discharge* —The discharge in chronic posterior gonorrhea is exceedily variable It may be so slight as to escape detection Indeed there are cases in which the only gross evidence of infection of the posterior urethra is shown by shreds in the urine If the patient's attention has not been attracted to them, their presence may be learned only when the physician examines the urine in quest of explanation for some other disease

20 *Sudden large stain* —Guyon and Jamin were the first to describe this symptom It appears as a sudden large drop, with or without partial sensations of a slight ejaculation Its stain upon the linen differs from the spots made by chronic anterior urethritis, in being much larger, when dried it usually has a whitish-yellow center, and becomes lighter colored and starchy toward the margins Sometimes a stain of this character becomes evident to the patient only from its moisture Not long since I had a patient who could, perhaps as a result of training, expel such a drop at will

The presence of a large stain upon the linen may be accompanied by smaller drops, as described before They would then evidence both chronic anterior and posterior gonorrhea, if on examination, the spots of both dimensions contain gonococci There is no reason why another form of urethritis may not affect the anterior urethra, while the posterior is the seat of chronic gonorrhea, and *vice versa* The explanation of the sudden large staining drop, as it escapes from the posterior urethra, is not very simple The compressor being the anterior boundary of the posterior urethra, is a much stronger muscle than the sphincter vesicæ, which barely separates the urethra from the bladder It is perhaps the presence of a heavier, thicker accumulation than the urine, in the posterior urethra, that stimulates the compressor to relax and the acellerator to expel the substance This must be coincident with too little urine in the bladder to overcome the sphincter But the absence of this large drop, for the reason above given, is more frequent than its presence The sphincter is more apt to yield than the compressor Consequently when the accumulation in the posterior urethra is sufficient to be appreciable by it, the contraction of the region is more likely to throw it into the bladder It then may be ejected with the first urine and convey the erroneous impression that a healing anterior urethra is the site of the disease To obviate such misapprehension, the anterior urethra should be carefully washed before allowing the patient to urinate The first urine, after the washing, will then carry the pathologic secretion of the posterior urethra, provided it be not too small and tenacious to be dragged along with the stream

21 *Stains as evidence of spermatorrhea* —A considerable number of patients, misled mainly by the publications of quacks, interpret the spots of chronic anterior or posterior gonorrhea as evidence of spermatorrhea, with all the horrors it is made to portend to them In all cases, especially where the patient is threatened with sexual neurasthenia in consequence, it may be well to demonstrate microscopically the absence of spermatozoa from the harassing spots Undeniably spermatorrhea may occasionally be coincident with chronic posterior urethritis and be provoked by it But as the supposed spermatorrhea usually yields with the cessation of urethritis, or shortly thereafter, the patient may be safely reassured

22 *A dry meatus*, as before indicated, may coexist with very copious pathologic secretion in the posterior urethra Indeed, the entire anterior urethra may prove healthy, under urethroscopic examination, while large drops of discharge my be propelled from the posterior urethra, simulating a series of "*petites éjaculations*" as Guiard calls them

23 *Supposed incontinence of urine* —Some patients seek advice for inability to hold the urine, while they control it perfectly They point to the stains on their shirts for confirmation of this diagnosis It require but little experience to distinguish the purulent circular stains from the diffuse stains of urine

24 *Apparent defecation—or urination—spermatorrhea* —A fairly large number of patients observe a thick, whitish drop either within or escaping from the meatus, during or after defecation, or at the end or urination It is easy to understand how the final contractions of defecation or urination may force from the posterior urethra such secretion as was not carried off by the stream of urine The microscope will decide whether the drop is due to chronic posterior urethritis, seminal vesiculitis, prostatorrhea or spermatorrhea

25 *Apparent anterior urethritis* —Occasionally cases present simulating chronic anterior gonorrhea, by an almost continual discharge, containing gonococci If the anterior urethra is carefully washed and then examined with the urethroscope, it will be found in perfect health Holding the tube's distal extremity close to the sphincter, pus will be seen welling into it, sometimes in sufficient quantity, if the Oberlaender urethroscope [illegible] d [illegible] extinguish the light I saw a case where [illegible] ions wer [illegible] ac-
teristic of anteri [illegible] pre [illegible]
brought him f [illegible]
lest he might

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[6] Posner, Therapie der Harnkrankheiten Berlin 1895

[7] Guiard Les Urethrites Chroniques Paris 1898

Parenthetically I may say here, that this has never occurred On urethroscoping the anterior urethra, it proved to be perfectly normal The region of the compressor, however, bulged forward and slight pressure of the tube against it caused so large an extrusion of thick whitish discharge that it filled about one-third of the tube, suggesting a seminal emission On examination this proved to be mainly pus, thoroughly loaded with gonococci Under intravesical irrigations of potassic permanganate, this case soon recovered The fact that such a chronic posterior gonorrhea can exist without infecting the anterior urethra, is doubtless attributable to a species of perhaps temporary immunity acquired by the gonorrhea, which was extended into the posterior urethra

In view of the preceding, this manifestation of chronic posterior urethritis is not difficult of explanation But when the discharge is very small in quantity and very tenacious, as in

26 *Chronic residual posterior gonorrhea*, without even the characteristic pain after urination, the only evidence thereof may be found in the shreds, filaments, flakes, etc , in the urine

27 *Disturbances of ejaculation* are not infrequent accompaniments of very prolonged chronic posterior urethritis Among these those most often found are

28 *Apparent aspermia* —The patients so affected experience only a very slight or no sensation of the flow of semen through the urethra On withdrawal for visual confirmation of the sensation, they find that nothing comes from the meatus In such cases, the semen, instead of being vigorously ejected from the urethra, flows into the bladder and is carried off with the next urine In several cases of this kind the patients confessed to a former habit of digital compression of the urethra, at the moment of venereal spasm, to avoid impregnation One of these (a physician) claimed that he had acquired the power of compelling the semen to flow into the bladder, but after a gonorrhea had lost all ability to eject semen normally forward

29 *Post-coital seminal dribbling* —In some cases the semen is partially or entirely retained within the posterior urethra, and dribbles from the meatus upon cessation of the erection This symptom is more frequent in urethritis ex libidine, than in chronic posterior urethritis

30 *Painful ejaculations* —In those not due to the ejaculatory spasm drawing upon nerve terminals compressed in infiltrations of the anterior urethra, the pain may be due to irritation of the chronically inflamed posterior urethra, just as urine the normal stimulant to vesical contraction, gives pain in cystitis, and as light, the normal visual stimulant, gives pain in iritis These painful ejaculations, however, are by no means essentially of gonorrheal origin In character, they may be lancinating, burning, extending from the meatus to the rectum, or radiating to the testicles and lasting some time after coitus, which may be followed by scalding on urination They are most frequent in excesses, such as are likely to be committed by middle aged men in sexual relations with very young women The most aggravated case in which painful ejaculation was the exclusive symptom of chronic anterior and posterior gonorrhea, was that of an otherwise normal man who screamed at the moment of ejaculation and fainted before entire conclusion of the act Usually the patients with chronic anterior urethritis complain of no pain during ejaculation, or only a slight burning When the pain is sharp, lancinating, stabbing and extends to the region of the anus or rectum, chronic posterior urethritis is probably associated with disturbance of the anterior urethra and with or without involvement of the seminal vesicles or prostate, or both

31 *Painful erections* —These are comparatively rare when accompanied by sufficient genesic impulse to overshadow the pain But there are cases in which erections without sexual desire are provoked by the presence of the chronic localized inflammation, they then stretch the tense areas or draw upon them, producing exquisite pain, while increasing the inflammation Many a man has mere mechanical erections from an overfilled bladder When the urethra harbors a chronic gonorrhea, the erections are, as a rule, more or less painful They subside, however, as soon as the bladder is emptied

32 *Excessive sexual desire* —Another symptom, which, however, does not belong solely to chronic urethritis, but to affections of the prostate and vesicle as well, is what some patients call a "teasing" or "nagging" of the genesic apparatus It urges a wish for coitus with partial erections, or only a slight swelling of the penis, or none at all It is much akin to those localized troubles, as a long prepuce or tight meatus or other irritation which lead children to masturbation These erections present mainly at night or on awakening While the excessive sexual desire is evident principally during the day, it often disturbs sleep In both conditions bromide of soda, bromide of potassium, or bromide of camphor in full doses will palliate the annoyance, but unless attention is paid to the patient's general condition, and unless his local affection is treated, they are of no avail

33 *Premature ejaculations* frequently occur when chronic posterior urethritis has ceased to furnish other external manifestations They may be so marked as to cause the patient to ejaculate, when his penis merely touches the external female genitalia In extreme cases even accidental brushing against any part of a woman's garments, will cause an ejaculation, even without partial erection, or suggestion of sexual desire

34 *Seminal emissions* are not infrequent in chronic posterior urethritis In those cases due to abstinence from sexual intercourse they may occur once, twice, even thrice a week, and not be followed by any mental or physical disturbances But if they recur several times in the same night, they are likely to become independent of sensual thoughts or dreams and then merit serious consideration

35 *Urethral pains*, extending to the neighboring organs in some cases, even down the inner surface of the thighs are not infrequently associated with chronic posterior gonorrhea They generally occur independent of urination, but may be aggravated during ejaculation

36 *Sexual neurasthenia* not infrequently supervenes in cases affected with chronic posterior gonorrhea The seriousness of aggravated forms of what has grown into an essentially neuropathic condition merits separate study, such as has been given to it by Beard, who invented the term

37 *The urine* yields symptoms of chronic gonorrhea, which might more properly be considered in a study of urinalysis But the macroscopic findings are such that the patients soon learn them and attach importance to them beyond their real merit

I propose here to merely outline those which are useful in common, rapid office-work Ordinarily the patient is asked to urinate into two glasses, usually conical, not unlike sherry glasses Guyon[8] directs attention to the need of a preliminary thorough cleaning of the meatus, lest the urine contain the results of balanitis or the abundance and diversity of foreign bodies, that may be carried with it He enumerates mineral dust, coal, wool, silk, linen, hemp, cotton, threads, bits of hair, feathers, grains of starch, etc The first and second urine obtained as above, is in a measure inconvenient, and liable to yield false impressions To overcome these I suggested, some three years ago, that large test tubes be used in place of the conical glasses They proved too fragile, however, for rapid office and dispensary work I therefore substituted 12-inch ignition tubes These give a column of urine equal in all parts, easy to handle, especially in those macroscopic examinations that are most frequently employed Moreover, they are very convenient for transference to centrifugal glasses, to test tubes and to microscopic cover glasses Guyon[9] devotes 365 pages to pathologic modifications of the urine, other authors have written volumes upon the subject Hence, to attempt to more than glance at the most superficial macroscopic evidences of disease would be impossible in a paper like this And in doing so, heed will be given only to those symptoms which attract the patient's attention

38 *Malodorous urine*—This is frequently the first symptom which patients observe It sometimes has a fishy odor in chronic posterior urethritis and in tumors of the bladder, an excessively aromatic odor after taking balsams (*e g*, santal oil), a violet-like odor—almost a perfume—after taking turpentine preparations, etc

39 *Turbid urine*—If the first urine is turbid it is generally accepted as evidence of anterior urethritis This, however, is open to error, as mentioned in another portion of this paper, in connection with a consideration of posterior gonorrhea simulating anterior gonorrhea If washing out the anterior urethra produces only clear wash-water and the first urine then passed is turbid, disease of the posterior urethra is fairly well established If all the urine passed is turbid, it may be due to an inflammatory disease of any part of the urinary tract, except the anterior urethra, whose pus is generally washed away with the first 150 centigrams of urine

40 *Dhomé's test*—If the turbidity is caused by pus, the addition of a saturated solution of caustic potash and then twirling the tube, will soon provoke that ropy separation which Dhomé, who devised the test, called "snotty" This forcible term (rotzig) has, as far as I know, not yet found a more elegant and equally descriptive English substitute

41 *If bacteruria* causes the turbidity, caustic potash will not separate the clear urine, as above described

42 *Phosphaturia* can show the urine just as turbid as in either of the preceding conditions A little nitric, hydrochloric or acetic acid will, especially after boiling the urine, clear it with the formation of bubbles, causing it to resemble champagne This excess of phosphates may accompany the act of digestion, especially in dyspeptics, it may follow mental exertion, anger, fright or apprehension, it is almost always present in prostatic enlargement

43 *Perfectly clear and brilliant urine* by no means proves absence of disease Centrifuging the specimen may reveal slight but positive evidence that some part of the urinary apparatus is affected

44 *Shreds, flakes, filaments, granules in the urine* are the symptoms which bring patients to us, long after other manifestations of disease have passed Roughly these substances found in clear urine or in urine not so turbid as to conceal them, become smaller with the approach to restoration to health[10] With Guyon (*Maladies des Voies Urinaires*) and Guiard (*Les Uréthrites Chroniques*), I deem the following general classification of these substances carried in the urine the most convenient for general practical purposes

PURULENT FILAMENTS	MUCO-PURULENT FILAMENTS	MUCOUS FILAMENTS
Short	Very much longer	Uniformly transparent.
Multiple	Less numerous often have ends rolled into a ball, or are serpentine	
Opaque Yellowish	Not homogenous but often consist of thicker spots, held together by a more transparent substance	No opaque spots
Fall rapidly to bottom, dissolve readily and increase turbidity	Sink slowly and remain coherent a long time By twirling the tube they can be made to rise from bottom	Light remain in the upper part or float on surface of the urine
Easily removable from the urine with platinum loop	More difficult to 'fish as proportion of pus diminishes	Still more difficult to fish
Easily spread upon cover glass no tendency to curl	Tendency to roll into a thick slippery heap or serpentine mass upon cover glass	Tendency to roll into a clear thick mass on cover glass, where it dries very slowly and then is barely recognizable
Microscopically Large masses of leucocytes, few epithelial cells, no mucus	Microscopically Leucocytes often with equal quantity of altered epithelial cells englobed in a substratum of mucus	Microscopically Never exclusively mucous always have some epithelial cells often also a few leucocytes

In the above comparative table, constructed for easy reference, I intentionally omit all mention of microbes The coarsest shreds, which quickly drop to the bottom, may be free from gonococci, while the finest mucous filament may contain distinct groups

In a general way, all that precedes applies to the urine in chronic anterior gonorrhea, but it is mentioned here because it is most convenient to examine both the first and second urines together When manifestations point beyond doubt to chronic anterior gonorrhea alone, the first urine is usually considered without preliminary washing of the anterior urethra But when doubt obtains, every effort should be made for proper differentiation

45 *Washing the anterior urethra*—Commonly, the patient having been instructed to come in the morning before he has urinated, the meatus is cleansed with cotton soaked in mercuric bichlorid 1 6000 and a sterilized, small soft catheter is introduced as far as the compressor Hot boric acid 4 per cent is injected through this catheter, until the solution that escapes along its sides is perfectly clear of even the finest granules This washing with the catheter is perhaps the safest for those practitioners who have not much experience in the method which I find more convenient and efficacious It consists in washing the anterior urethra without a catheter as described elsewhere[11] Naturally, in employing the irrigator, care must be taken that none of the wash-fluid

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[8] Maladies des Vois Urinaires, Tome I p 293 [9] Op cit

[10] Valentine Chronic Gonorrhea its Scientific Treatment ' Clinical Recorder January, 1898

[11] Valentine "Improvemen Urethral and Int ical Irrigation Medical Record, June

be injected into the posterior urethra, whose contents may be diluted thereby or have added to them the abnormal secretions of the anterior urethra This vitiation of the test is more easily obviated by employing the irrigator I now use and recommend The anterior urethra being thoroughly washed, the patient is instructed to pass his first 50 c c of urine into one tube and the remainder into another or others If the first urine so passed is turbid, has coarse or fine shreds, filaments, flakes or granules, and if the subsequent urine is clear, the diagnosis of posterior urethritis, in the majority of cases, may be considered established

46 *Turbid second urine*—Even when the first urine passed after the cleansing of the anterior urethra is clear, the absence of posterior gonorrhea is by no means proven The morbid secretion may be so slight and so adherent to the posterior urethra, as to render it not detachable by the urinary stream The urethroscope is then the only means we have to determine the location of the disease

Further consideration of these questions is relegated to a paper on the "Diagnosis of Chronic Gonorrhea," now in preparation Even cursory attention to the preceding shows that nothing beyond an elementary study of the most salient symptoms of chronic gonorrhea has been contemplated This may appear, at first, as an unwarrantable consumption of the time of this learned body Yet, even among the best informed, symptoms are often hastily passed over as if familiarity with them had reduced their importance My principal motive, I unhesitatingly confess, is to provoke a discussion which will doubtless be so instructive, as to fully repay me for the labor I devoted to this effort

The large number of subjects touched upon makes it seem convenient to index them for rapid reference The figures attached to the titles correspond to those in which they are mentioned

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242 West 43d Street

CHRONIC PROSTATITIS AND ITS TREATMENT

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association, held at Denver, Colo, June 7-10, 1898

BY H R. WOSSIDLO, M D
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So many mooted questions still envelop chronic prostatitis that its presentation, especially in a necessarily brief paper, is attended with considerable difficulty The symptoms, too, are so readily confounded with those of other ailments, save by most searching study, that oftentimes a patient with chronic prostatitis is treated for all manner of other diseases, unsuccessfully To contribute what I can, in the time at my disposal, to the better comprehension of the disease is the task I have set myself in this paper

The more or less severe tickling and burning in the urethra or at the glans, either incessantly or at intervals, the often increased frequency of micturition, the aching and stabbing pains in the anus, sacrum or perineum, the pain in the suprapubic region as well as the radiating pain along the lumbar region and the legs are well-known manifestations of chronic prostatitis I hardly need mention the often present uneasy feeling or even painful sensation along the inguinal canal and in the testes, nor will it be necessary to describe the various nervous symptoms of neurasthenic origin in consequence of a chronic prostatitis

However, it may be useful to emphasize the fact that the variety of symptoms arising from chronic inflammation of the prostate do not in every case point directly to the local affection, but on the contrary very often obscure the real nature of the disease, and may cause the original trouble to be overlooked Another cause of this error is the similarity of the symptoms of chronic prostatitis to those of posterior urethritis This, in a great measure, explains the wide differences that prevail regarding the frequency of chronic prostatitis While, for instance, Erraud observed prostatitis in 70 per cent of all cases of gonorrhea, and Posner as well as Finzer mentions the frequent occurrence of the disease, Fürbinger and others are of an opposite opinion Lately, however, the attention of physicians has been drawn more closely to this question and observations of a larger number of cases are reported by Petersen, Neisser, Felecki, Fuller, Berkeley Hill, etc

My own practice has convinced me that acute and chronic prostatitis could be diagnosed much more frequently if in every case of acute, subacute or chronic gonorrheal urethritis the patient's prostate were examined Of course, I do not mean to say that in every case of acute or chronic gonorrhea the prostate must be affected Considering the close connection of the prostate with the posterior urethra and also that the ducts of the prostate open into the same, it is easily understood how an inflammation of the posterior urethra can extend into the prostatic gland But we meet with cases of prostatitis and seminal vesiculitis without any apparent inflammation of the posterior urethra It is supposed that in such cases an accidently discovered chronic prostatitis has been chronic from the very beginning without having passed through an acute stage It seems more likely that in such cases the infecting agents, the gonococci, did not rest long enough in the deep urethra to produce inflammation thereof, or that they did not find a suitable medium in the posterior urethra to grow upon, but wandered directly into the prostate

The beginning of the acute prostatitis may be so mild, in such cases, as to cause no particular trouble to the patient, whose whole attention is directed to the more intense suffering from his acute anterior urethritis Only after subsidence of the acute anterior do the symptoms of posterior trouble make themselves felt Small wonder then that the physician overlooks the latter disease, unless he make it a rule to examine the prostate in every case

Bacteriologically, also, the nature of the prostatic inflammation has been questioned Finger in 1893 declared it indicated whether acute or chronic prostatitis is caused by an infection, by gonococci or a mixed bacteria Neisser (German Dermatological Congress at Breslau, 1894) published several examinations he and Putzler had made, in which they found gonococci in the prostatic secretion This has been confirmed by several other authors, and I can but endorse it Although not always present, and although it is by no means easy to discover gonococci in the prostatic secretion, especially in chronic prostatitis, yet now and then we can detect some, as demonstrated several times in my post-graduate courses

The text-books give as causes of chronic prostatitis sexual excess, masturbation, gout, the internal use of balsams and traumatisms I do not deny the existence of chronic prostatitis after such accidents, but I believe that that they are very rare, and that the principal etiologic factor is gonorrhea I am sure that in many fresh cases ascribed to one of the above mentioned causes, a still existing chronic urethritis could be detected if a urethroscopic examination had been made

A symptom considered as being characteristic for chronic prostatitis is prostatorrhea, that is an either constant or a periodical oozing of prostatic fluid from the urethra We find this opinion in most of the text-books In conformity with Felecki of Budapest[1], and with Grosglick of Warsaw[2], I found free prostatorrhea, i e a continual flow of prostatic fluid very rarely in cases of chronic prostatitis I believe that urethrorrhea—an innocuous mucoid secretion from the urethral glands—and spermatorrhea are in such cases mistaken for prostatorrhea

Defecation-prostatorrhea and urination-prostatorrhea, are terms employed to designate a flow of prostatic fluid following defecation or micturition They are by no means as frequent as is generally supposed, still their existence can not be denied

The general explanation for this symptom is in the pressure of hard feces against the prostatic gland and abdominal pressure in defecation or micturition Another very probable view of its cause is given by Felcki According to his opinion, the act of defecation and micturition, by providing an irritation to the inflamed and hypersensitive prostate, leads to the contraction of its muscular fibers, by which the prostatic fluid is expelled, as in coitus It must, therefore, be borne in mind that chronic prostatitis may exist and often is present without prostatorrhea

Another symptom worth mentioning is not so generally known as being one of chronic prostatitis, it is the dribbling of urine after micturition Several minutes after having urinated the patient feels drops of urine running from his urethra, this dribbling repeating after every micturition Such patients have a sensation as if their bladder had not been entirely emptied, they shake the penis a long time after urination or try to squeeze the urine from the urethra by stripping the perineum to protect the clothes from the dribbling urine

The same dribbling of urine (harnnachträufeln) is observed in cases of urethral stricture and hypertrophy of the prostate We must consequently exclude stricture before we make a chronic prostatitis responsible for it This symptom must not be confounded with incontinence or with ischuria paradoxa In incontinence the urine dribbles involuntarily, the bladder never being filled, while ischuria paradoxa designates the overflow of the bladder in cases of stricture or prostatic hypertrophy In our cases the dribbling of the urine seems to be caused by impaired function of the musculus compressor urethræ According to Ultzmann, the compressor, being irritated by the inflammation, remains for a time in contraction, which prevents the entire emptying of the last drops of urine These flow off as soon as the spasm subsides Peyer, on the contrary, explains this "nachträufeln" by a weakness of the compressor muscle preventing the timely shutting off of the urethral lumen at the end of micturition

I mention the great frequency of nervous troubles as a sequel of chronic prostatitis The more or less constant uneasy or painful sensations along the genito-urinary tract constantly draw the patient's thoughts to this region Should he then, in addition to his disagreeable sensations, observe a degree of sexual weakness, incomplete erection or premature seminal emission, our patient's spirit becomes depressed He is constantly worrying over his illness and loses all capacity for mental or physical work In the worst cases general nervous debility sets in, not infrequently increasing to more or less complete exhaustion Our patients become more or less obstinate hypochondriacs It would be impossible to go into the details of all the nervous troubles complicating chronic prostatitis, they belong to the large group of neurasthenia sexualis However, it must be understood that a great many patients suffer from such nervous disturbances without any affection of the prostate, and that others, again with pronounced chronic prostatitis never show any nervous symptoms at all The physician should make it a rule to examine every neurasthenic for chronic gonorrhea and chronic prostatitis

We diagnose chronic prostatitis by examination of the prostate per rectum and by microscopic examination of the prostatic secretion Rectal palpation of the prostate is done either in the recumbent position or by placing the patient with his abdomen over the head of a sofa or supported by pillows over the side of the bed with the shoulders depressed and the legs slightly apart Care should be taken that the bladder is empty, otherwise, an erroneous impression may easily be formed

The patient being in the proper position, the index finger is gently introduced into the rectum and first glides softly over each prostatic lobe, determining its size and the character of its surface. Gradually a slight pressure on the prostate is made with the object of expressing some prostatic secretion for microscopic examination. The prostate will be found more or less irregularly enlarged. In some cases both lobes are irregularly enlarged and more or less painful to the touch, as a rule, however, one lobe is more affected than the other. The enlarged lobe may appear to be hard and of a more or less even surface, or of an irregular shape, presenting distinct nodules. This we find mostly in cases of follicular prostatitis, while an even, hard and smooth surface of an enlarged lobe is mostly due to a chronic interstitial inflammation, either one entire lobe may be soft and uneven, permitting the finger to be pressed deep into it, or we detect soft, easily impressible patches in both lobes, surrounded by somewhat harder tissue. The pain produced by the examination varies in intensity, some patients bearing a strong pressure comparatively easy, others complaining bitterly at the slightest touch.

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[1] Felecki Beiträge für Kenntniss und Therapie der Entzündung der Prostata und der Samenbläschen,—Cbl für die Krank der Harn u Sexualorgane 1895, p 468

[2] Monats berichte über die Gesammt leistungen auf dem Gebiete der Krankheiten der Harn und Sexual Apparates —Bd ii 3 4, 5,

A diagnosis of prostatitis can not be considered complete unless the prostatic secretion is examined microscopically. In cases without urethral or vesical complication we examine the prostatic secretion obtained by a gentle massage of the gland immediately after the patient has emptied his bladder. If in such cases, however, the quantity of the prostatic fluid is too small to appear at the meatus, it will mostly remain in the posterior urethra or flow backward into the bladder. In such a case we let the patient urinate into two glasses and ask him to keep some of his urine in the bladder. After massage of the prostate, the patient is ordered to empty the rest of his urine, which will contain the prostatic fluid.

It is much more difficult to obtain prostatic fluid *per se* in cases still complicated with urethritis or cystitis. It will then be necessary to exclude all substances coming from the mucosa of these organs. In complicating urethritis anterior we therefore wash the urethra with a catheter introduced to the bulb with sterilized water or a boracic acid solution until the water or the solution contains no more pus or filaments, etc. We then order the patient to urinate and squeeze out the prostate after he has emptied his bladder. In case of a coexisting posterior urethritis or cytsitis, we first carefully wash the posterior urethra or bladder after urination until our solution passes off quite clear. After having filled the bladder again with our solution we let the patient urinate it out, either partly or all of it. This is followed by a massage of the prostate.

The prostatic fluid so obtained very often shows macroscopic changes indicating an existing prostatitis. The discharge is very profuse, turbid, mucopurulent or purulent, in other cases, its macroscopic aspect differs very little from normal prostatic secretion. The decision as to the nature of the secretion is given by the microscope. According to the severity of the inflammation pus cells are found in varying quantities in the secretion. The discovery of pus cells in the prostatic secretion places the diagnosis of a chronic prostatitis beyond all doubt. Besides leucocytes we find the microscopic specimens to contain cylindric cells in large quantities. Some cases of chronic prostatitis, present but few leucocytes in the secretion; these cells may be very abundant, indicating a desquamative catarrh of the prostate. Red blood corpuscles are also occasionally found. According to Fürbringer, the spontaneous formation of seminal crystals in the secretion, without previous addition of phosphate of ammonia, is of diagnostic value for chronic prostatitis.

It has been mentioned above that gonococci may be found in the prostatic secretion, their discovery in the microscopic specimens demonstrating the gonorrheal origin of the disease. With regard to a differential diagnosis between chronic prostatitis and other genito urinary diseases, we must exclude the following: 1. Urethrorrhea ex libidine. 2. Spermatorrhea. 3. Chronic posterior urethritis. 4. Other diseases of the prostate itself, especially prostatic tuberculosis. Urethrorrhea ex libidiæ produces a mucoid secretion from the urethra, which the patients may often take to be prostatic fluid or spermatic juice. Microscopic examination will readily show the harmless nature of this secretion and its origin, consisting mostly of mucous containing only a few pavement epithelium or cells. The abundance of spermatozoa in the secretion will easily permit the diagnosis of spermatorrhea. The difficulty of a differential diagnosis arises only when we find pus cells are mixed with the sperma. In such cases the pus may come from a seminal vesiculitis or from a diseased prostate. An examination of the semen will assist us. The latter usually appears in the urine in the form of gelatinous globules resembling sago and consisting exclusively of spermatozoa and epithelial cells from the seminal vesicles. In seminal vesiculitis these gelatinous corpuscles contain leucocytes. If leucocytes are found in the prostatic secretion alone and not mixed with semen we diagnose prostatitis, but if, on the other hand, leucocytes are found in both secretions, we diagnose a seminal vesiculitis and leave the diagnosis of prostatitis *in dubio*.

In such doubtful cases rectal examination will often materially assist us. We find the diseased vesiculæ seminalis as elongated swellings beyond the prostate, smooth, round, fluctuating and painful to the touch or more or less hardened and nodular. I refer for particulars to Fuller's paper on "Seminal Vesiculitis," read before the New York Academy of Medicine, Section on Genito-Urinary Diseases, meeting of May 9, 1893.

The differentiation of chronic posterior urethritis and chronic prostatitis can easily be made by following the above described plan for obtaining the prostatic secretion, after irrigation of the posterior urethra. Furthermore, urethroscopic examination will readily set aside all doubt. The differentiation between chronic prostatitis and tubercular prostatitis is of the greatest importance. It is not always easy to distinguish between a tuberculosis of the prostate in its beginning and a chronic prostatitis, especially as the prostatic secretion obtained by pressure on the prostate may in both cases contain leucocytes. Sometimes we may be able to discover tubercle bacilli in the secretion and all doubts are then dispersed. But the absence of the bacilli in a microscopic specimen does not exclude tuberculosis. We, then, must rely upon rectal palpation. In tuberculosis we generally find the prostate studded with tubercular nodules. Prostatic tuberculosis being very rarely primary, the diagnosis is easily cleared up by the detection of tuberculosis in other organs.

The prognosis of chronic prostatitis in the early stages is not unfavorable in the advanced form, especially when the prostate on rectal examination gives the impression of being flabby and distended with secretion, a cure is more or less doubtful Yet even in these cases we can afford a great deal of relief to our patient Many a neurasthenic can be cured of his complaints, although a residuum of his prostatic affection remains Careful and proper treatment can do much, even if it has to overcome many difficulties, and even if it leads to only partial success But in the latter case also, the general condition of the patient will be materially improved The treatment of the disease must not only be local but also constitutional It should never be forgotten that most of our patients are neuropathic individuals, and we must therefore from the beginning endeavor to gain their full confidence If local treatment relieves them of their principal annoyances we must impress upon them the curability of their disease, with the object to distract their minds from the hypochondriacal thoughts regarding their local affection This general treatment will be essentially assisted by corroborative measures For anemic or lymphatic individuals we provide tonics fresh air, mild exercise Carefully directed hydropathic treatment will often benefit materially Our local therapeusis should, first of all, be prophylactic, that means we should do our very best to prevent the setting up of a prostatitis in all cases of gonorrheal urethritis A careful treatment of the latter will in many cases enable us to avoid prostatic complications If, however, acute prostatitis sets in, we should try to cure it as quickly and as completely as possible An early detection of acute prostatitis before the inflammation has involved the whole gland, is the first step to a quick cure I repeat, therefore, the necessity of examining every case of gonorrhea on this score As soon as an acute prostatitis is diagnosed, we should put our patient to bed and stop all urethral injections and endo urethral treatment I am in the habit of prescribing the following treatment for my patients with acute prostatitis Twice a day, morning and night, a rectal injection of warm water of at least 35 degrees C, care being taken that the nozzle of the irrigator does not hurt when introduced into the rectum At least one pint of warm water should be injected and retained as long as possible Before making injection at night a hip bath should be given, as warm as can comfortably be borne After the rectal injection has returned, which usually is followed by a mild stool, a suppository of one-third of a grain of iodoform to one grain, is inserted in the rectum Should pain be severe, and should micturition be frequent and painful, I add half a grain to a grain of codeia phosphoricum to the the suppository Internally I give santal oil in capsules By this simple treatment I generally succeed in relieving pain almost instantaneously This is usually followed, in the course of one or two weeks, by a subsidence of acute prostatitis, the prostate generally becoming almost normal to the touch Of course, abscesses of the prostate, when already formed, have to be opened It is, however, very rare that suppuration leading to an abscess takes place if my plan of treatment is instituted at an early stage When, after the acute stage is overcome, chronic enlargement with all symptoms of chronic prostatitis remains, massage of the prostate is recommended

Cases of an established chronic prostatitis, especially very old cases, are much more difficult to treat In the great majority gentle massage of the prostate every second or third day will prove the most effective means of procuring, if not a complete cure, at least decided improvement To hasten the reabsorption of the inflammatory exudations in the prostatic gland, I continue the warm rectal irrigations as prescribed for acute prostatitis, as well as the warm hip-bath and the iodoform suppositories Lately I instituted another course of treatment besides massage of the prostate An Arzberger rectal apparatus is introduced into the rectum and a stream of hot and cold water is conducted through it alternately First a hot water stream runs three to five minutes through the double canula of the apparatus, and immediately after it a stream of cold water is passed through it This is repeated until about 2 liters of each, hot and cold water, have made their circuit through the apparatus By this alternate application of heat and cold in quick succession a rapid contraction and dilatation of the blood vessels of the prostate is produced, acting upon the gland almost like an electric current, only with less violence

The first noticeable result of this treatment is that almost from very first application the patient experiences relief from the local pains, which in the course of a few weeks generally disappear entirely All my patients are very fond of this kind of treatment, and I can strongly recommend it I repeat that massage of the prostate is regularly done at the same time

All the suppositories except those of iodoform, prescribed for chronic prostatitis, have yielded so little good in my practice that I have given them up entirely Of course it is understood that in treating chronic prostatitis, the patient should be cured of his chronic gonorrheal urethritis at the same time

A NEW SIMPLEST PROCTOSCOPY

Presented to the Section of Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association held at Denver Colo June 7 10 1898

BY THOS CHAS MARTIN, M.D

LECTURER ON DISEASES OF THE RECTUM IN THE CLEVELAND COLLEGE OF PHYSICIANS AND SURGEONS
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It has been complained that the best methods proposed for the inspection of the rectum require so expensive an armamentarium and such an infinite degree of painstaking practice on the part of him who would see, that the busy general practician can not hope to invade with his keen glance this darkest continent of special surgery This is an error On the contrary, as we shall see, no artificial means whatsoever are required for a complete ocular inspection of the rectum

The elevation of the hips which sets in operation that principle of physics which governs the methods of Marion Sims' vaginal inspection (1845), Van Buren's rectal inspection (1871), and the method of the senior Allingham (1882), of Walter J Otis (1887), and of Howard Kelly (1895), which controls my own procto colonoscopy (1896), and which suggested Trendellenburg's posture, is, also, the chief feature of this the simplest proctoscopy

The essentials of this method are a patient, an assistant and an operator having at least one finger on each hand The patient is to be put into the knee-chest posture , the assistant is to put and to hold the patient, and the surgeon's fingers are to be used to open the anus, all in the following manner, to wit

1 The patient is to be completely anesthetized as

he lies on his back, and then turned toward the assistant and into Sims' posture

2 The assistant is to station himself at the patient's knees In his left hand he is to grasp the patient's feet He is to lean himself against the patient's knees He is to pass his right arm under the patient's hips Now steadying the feet and bearing himself firmly against the patient's knees, with his right arm he is to lift the hips and pull the patient into the knee chest posture

Here, securely in the embrace of the assistant, the patient is to be balanced on his perpendicular right thigh Exactly here, throughout the whole time of the surgeon's manipulations, steadily the patient must be held

3 The surgeon is to close his hand and to point his index finger as shown in the accompanying illustration (Plate 1) So, likewise the other hand The wrists are to be crossed, the hands placed back against back, and the nails of the index fingers placed one against the other, as shown in the accompanying illustration (Plate 2) The surgeon is to lubricate these fingers and gently insinuate them through the anus and place their ends beyond the borders of the levatores ani This accomplished, the anus is to be divulsed in the direction of the ischial tuberosities, by the surgeon forcibly parting his fingers as is shown in the accompanying illustration (Plate 1) Under this manipulation the rectum becomes atmospherically inflated

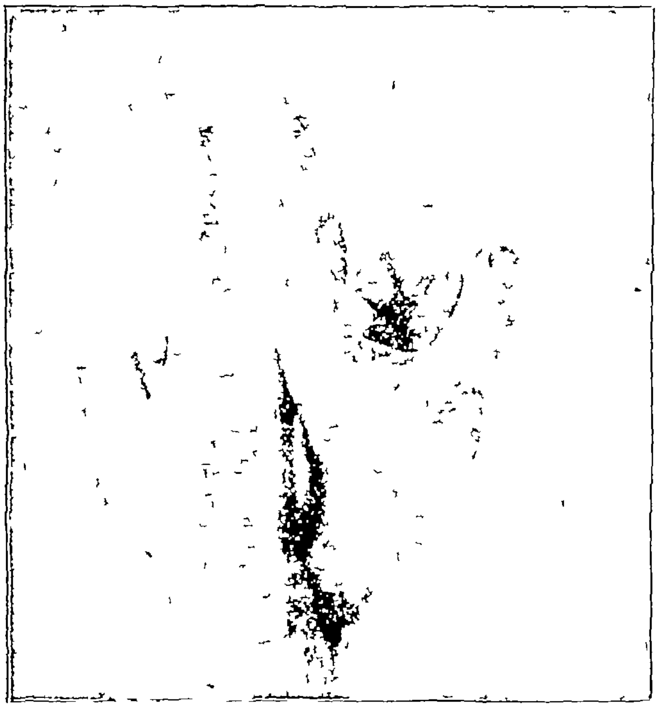

Figure 1

Now, provided the surgeon lower his head to the level of his fingers and then rise again, or stoop, or move a little from side to side, he may command under his eye a view of the atmospherically inflated rectum to the depth of six or eight inches (15 24 or 20 32 cm) and in some instances he may behold even a part of the sigmoid flexure

It is possible for the operator to manipulate his patient and to finish his inspection within two and a half or three minutes, provided the patient be in a state of complete anesthesia

If this method be practiced, as I am persuaded it may be with facility by the general practitian, I am convinced that the greater number of rectal diseases may be instantaneously diagnosticated But I must declare that here, at diagnosis, the achievement of the simplest proctoscopy ends, for the reason that the operator's hands are so full of his patient he can do nothing at all for the disease which he may have discovered

Under some conditions and amid some circumstances the rectum will not inflate If there be a close stricture of the rectum, if there be malignant growth or other diseases of the rectum by means of which the gut's coats have become extensively filled and fixed with an organized plastic exudate, if for some reason the intra-abdominal pressure be abnormally increased, as it may be by the voluntary bearing down of the patient, as it may be by enormous intestinal flatus, or by ascites, or if there be an impinging uterus, extra-rectal growth or extensive infiltrating disease of the contiguous textures, rectal inflation by this method or by any other which is governed by the same principle is a physical impossibility, but this need not baffle the man bent on seeing by instrumental aids

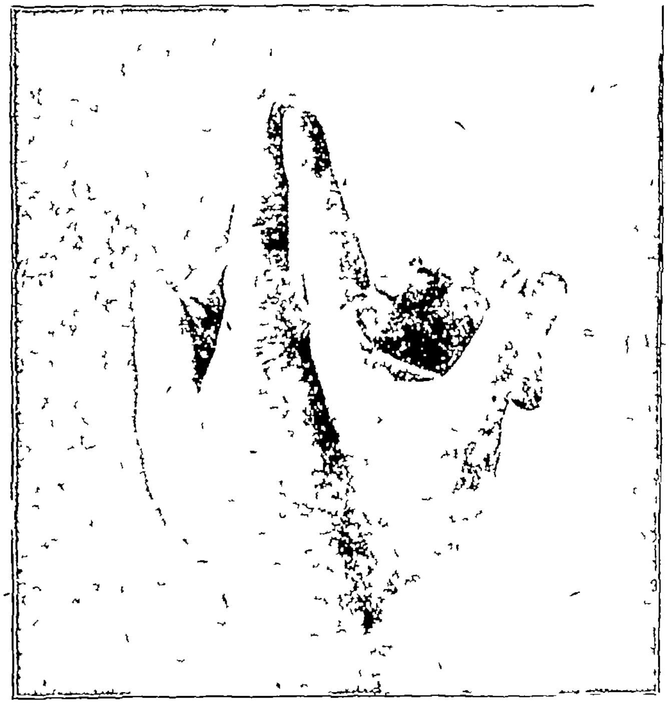

Figure 2

Practiced as described, when not embarrassed by the exceptions specified, this method will achieve its purpose and reveal to the surgeon that the transverse diameter of the rectum is variable, while in some places it is not more than an inch (3 54 cm), in others it is more than four times this diameter

The rectum may present to the eye of the imaginative observer the appearance of a chain of urinary bladders, communicating one with another by means of irregularly elliptical openings set at varying axes, and bounded by the non-parallel borders of the semilunar valves In the normal rectum the air pressure smooths the mucous membrane evenly over the entire surface of the gut The normal mucous membrane of the so-called ampulla appears at first wet and of a shining bluish gray As it dries, under the influence of gravitation the blue venous tint fades out of the gray and the wall becomes pink tinged Presently it assumes the appearance of parchment, and sometimes it appears painted at rare intervals with ramifying little arteries which are crowded and overlapped by the larger companion veins, the latter are less arborescent and more suddenly dive and disappear in the bowel wall In time, over all there comes a sheen as of collodion varnish and the vascular pictures fade save that one beneath the promonotory of the sacrum These phenomena appear exactly as described only in the healthy rectum, in the diseased organ the color varies much

Should the operator deviate from the prescribed directions for the manipulation of his fingers and so twist his hands as to divulse the anus in the antero-posterior direction instead of laterally he invites defeat upon himself, for in the male the fixation of the perineum and the immobility of the coccyx interfere with the requisite dilatation, while in the female, the extreme mobility of the perineum and particularly the backward displaceability of the coccyx will allow such traction to be made upon the levatores ani as to pull their inner borders parallel and almost together, and in consequence the wider the female's anus be opened anterio-posteriorly the closer it shuts laterally to rob us of our view

1077 Prospect Street

PRIMARY CARCINOMA OF THE AXILLA

Presented to the Section on Surgery and Anatomy at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver Colo June 7-10 1898

BY D W GRAHAM, M D
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Carcinoma of the axilla consecutive to a primary focus of the disease in the mammary gland, or some other organ or structure, is a matter of almost daily occurrence in the experience of the surgeon But primary carcinoma of the axillary region is rare enough to be worthy of discussion, especially as it raises some important questions in the fields of histologic anatomy and pathology, and of practice There is no apparent reason why this region might not be the site of the squamous celled, or true skin carcinoma, as frequently as any other in the body Primary cancer of the axillary skin is, however, exceedingly rare Of 7297 primary cases of carcinoma analyzed by Williams 571 were of the skin, but of these latter only three were axillary

There is no doubt but that occasionally a primary carcinoma of the breast will first manifest itself clinically through the infection and enlargement of the axillary lymphatics The primary nodule, small, slowly-growing and deeply seated, and the conditions present for quick invasion and rapid progress of the lymphatic infection would give a pathologically secondary, but a clinically primary tumor in the axilla While this is the explanation usually given and generally accepted for most carcinomatous tumors first appearing in this region it is applicable only to a small number of such cases, and should not apply except when the axillary tumor shows an exclusively lymphatic histologic basis

There are two structures found in the axillary space in which carcinoma is prone to originate, which will account for nearly all cases of [illegible]iary in this region One of these is the supernumerary mammary gland tissue more or less perfect or rudimentary, found occasionally, and the other structure constitutes the large convoluted, tubular sweat glands, which are constantly present

The most complete recent exposition of the subject of supernumerary mammary glands in the human subject is that by W R Williams in the *Journal of Anatomy and Physiology*, Vol xxv, 1891 It is shown that there may be one, two, or three of these above the normal gland on a line diverging outward to the axilla—two on the border of the pectoral muscle, and one in the base of the axilla The latter is the least frequent Most frequently these supernumeraries are rudimentary masses lying wholly beneath the skin and neither visible nor palpable, resembling in gross appearance ordinary subcutaneous connective tissue, but microscopically they show some of the normal elements of the gland These subcutaneous "mammary lumps," as they have been called, may be wholly detached from each other and from the normal mammary gland, or they may be joined to the latter by an isthmus of the same kind of rudimentary tissue. In 132 consecutive cases of carcinoma in the mammary region in females Williams found that 13 of them had their origin in supernumerary structures quite outside the normal glands None of these, however, were located in the axilla proper

The sweat glands of the human axilla have been specially described by such anatomists as Sappey, Koelliker and others, but it remained for C H Creighton to demonstrate their peculiarities and emphasize their significance from a pathologic standpoint In the Royal Medico-Chirurgical Society transactions of 1882, Vol lxv, page 53, he reports three cases of axillary carcinoma in dogs, originating in the large axillary sweat glands Spencer Wells, in Wood's Monographs, Vol iii, No 1, 1889, reports a case of axillary carcinoma with the microscopic findings which seem to demonstrate that it originated in the large, tubular sweat glands in the manner described by Creighton They are regarded as a kind of rudimentary organ of cutaneous secretion in the human when compared with similar structures in the lower animals, and, as Wells observes, are subject to all the risks of such survivals or rudiments These glands, while also found in the groin and in the areola of the breast as well, are looked upon as midway in structure, with their large acini and amount of secreting surface, between the ordinary sweat glands and the mammary gland They have their distinguishing histologic features by which they can be identified with ease They are situated under the skin and not in the skin like other sweat glands and their ducts open into the hair follicles They are large enough to be detected as firm, round bodies in the subcutaneous tissues in a dissection It is quite probable that a more careful study of specimens of primary axillary tumors would show these glandular structures to be the point of departure for the morbid process in the majority of cases, rather than the supposed axillary supernumerary mass of mammary tissue A study of the clinical histories also of those cases which have been put on record is suggestive in this same direction

The two following cases have served as a basis for this brief paper on this subject

C[illegible] D.C , aged 50 **years**, came into my hospital [illegible] The [illegible] filled with a hard [illegible] arm by pressure

The history and physical characteristics all pointed to carcinoma. Nothing abnormal could be detected in the breast nor in the tissues intervening between this and the tumor Removal of the growth required an unusually difficult dissection, a section of the axillary vein being extirpated with the mass Six months later the patient returned with a nodule not larger than the end of a finger, just beneath the skin, about the middle of the upper hemisphere of the mammary gland The skin was involved and adherent to the nodule The breast was amputated by my colleague and a microscopic examination was made by Dr William E Schroeder, who had already examined the tumor removed six months before from the axilla Both specimens were demonstrated to be carcinoma

Case 2 —Mrs A C, 30 years of age, had had acute mastitis with suppuration while nursing a child in 1895 The examination, December, 1897, revealed a hard tumor in the base of the right axilla as large as a hen's egg, and which had been developing for a number of months There were several small nodules, which had developed later, extending along the border of the pectoral muscle toward the breast The latter was equally consistent throughout and except that it was firmer and slightly larger than the left breast, it seemed to be perfectly normal The main tumor was movable, and to all appearances did not involve the overlying integument. The several smaller nodules seemed to be enlarged lymphatic glands

The operation consisted in removing both the tumor and the breast, together with the isthmus of intervening infected tissue Dr L Hektoen made a careful microscopic examination of the specimens and reported there was no carcinoma of the breast proper, it being, however, in a state of chronic inflammation The ducts were much enlarged and dilated, filled with semisolid secretion, cheesy like and surrounded throughout the whole breast and nipple by hyaline connective tissue The main tumor from the axilla was simple carcinoma with considerable fibrous tissue, and the intervening lymphatics were some of them carcinomatous, and the opinion was expressed that the nodule nearest the mammary gland was an outlying accessory portion of the gland, although before the operation there seemed to be a clear intervening space between them

It is to be regretted that in neither of these cases did it seem possible to demonstrate by the microscopic examination the exact anatomic structure or characteristics of the tissue in which the carcinoma appeared

After a thorough search of medical literature I have been unable to find but eighteen reported cases of primary carcinoma of the axilla which can be accepted as such I have rejected a number of those that have been so reported, because the evidence shows that they were either sarcoma or secondary carcinoma Even two or three of these eighteen, which follow, might prove to be sarcoma if fuller histories were obtainable or if the specimens had been microscopically examined since the time when there began to be histologic differentiation between sarcoma and carcinoma

Case 1.—H Snow London *Lancet*, March 12, 1898, p 717 Female, aged 47 Hard mass, filled whole axilla One and a half years' duration Skin adherent Breast healthy, but removed with tumor because the disease seemed to be traveling toward the mammary gland, the normal direction of infection being cut off

Case 2 —C E N Kelly, London *Lancet*, March 26, 1898 p 859 Female aged 80 Tumor size of pigeon's egg in middle of axilla at fourth rib Hard and fixed to the chest wall Skin ulcerated No apparent connection with breast. No operation Its course was watched and it extended gradually along the border of the pectoral muscle to the breast, which became involved No lymphatic glandular enlargement. The opinion is expressed that the tumor did not originate in an outlying free nodule of mammary gland tissue

Case 3 —F P Paul, Transactions Pathological Society London, 1895, Vol xlvi, p 153 Female aged 29 Tumor appeared in axilla while nursing child then disappeared and reappeared when nursing next child and took on all the characteristics of typical scirrhus Tumor excised No connection with the mammary gland Cut section exuded white secretion, like inspissated milk Thinks it originated in sweat glands but this opinion is controverted by Williams, who believed it arose from a detached axillary mammary lobule (*British Medical Journal* 1894, Vol ii, p 1405)

Case 4 —H. Walton, *Medical Press and Circular*, London, 1895, Vol ii, p 45 Primary hard cancer in axilla Operation Several recurrences Subsequent operation Immunity of the breast from cancer

Case 5 —Spencer Wells, *Wood's Med and Sur Monographs*, 1889, Vol iii, p 18 "Cancer and Cancerous Diseases" A case of axillary tumor removed Female aged 46 Microscopic examination showed origin in the sweat glands Breast free from disease

Case 6 —Bailly, *Le Progrès Médicale*, Second Series, 1887, Vol v, p 53 Female aged 68 Tumor of right axilla Three years' duration No connection with mammary gland Microscope showed hard carcinoma

Case 7 —Pied *Bulletin Société Méd de la Tours*, 1886, Vol xxvii, p 62. Carcinomatous tumor of the axilla Extirpation

Case 8 —J Congoureux, *Gaz Med Chi*, Tolouse, 1881, Vol xiii, p 137 Voluminous carcinoma developed spontaneously in the right axilla without morbid change of the breast.

Case 9 —J Coates, *Glasgow Med Jour*, 1879, Vol xi, p 322 Melanotic cancer removed from the axilla by MacLeod

Case 10 —Von Mosetig Moorhof, *Ber d K K Kranken*, Wieden, 1898, p 190

Case 11 —R A Cleemann Transactions Pathological Society, Philadelphia, 1867, p 151 Female aged 70 "Lump" in axilla 1½ inches in diameter of four years duration Excised A year later another lump appeared between the cicatrix and the breast Both tumors pronounced epithelioma, the latter described as composed of a half dozen hard, rounded bodies in size from a split pea to a marble, making a single mass The appearance of the mass and the skin led to the suggestion that the origin was in the appendages of the skin—"the sweat glands"

Case 12 —C F Maunder, Transactions Pathological Society, London, 1862 Vol xii, p 229 Male aged 30 Open cancerous ulcer involving the axillary artery, not excised Began as a lump in the axilla one year before, every clinical feature of carcinoma, but not demonstrated microscopically

Case 13 —R Alba, *Espana Med* Madrid, 1862, Vol vii, p 388 Axillary cancer Extirpation by Prof Natalis Cano Reported cured

Case 14 —S Benavides, *Chron d' I Hosp*, Madrid, 1856, Vol iv, p 206 Occult cancer and scirrhous tumor in the right axilla. Extirpation

Case 15 —H Ohm, *Deutche Klinek*, 1854 Vol vi, p 288 Female aged 40 Tumor arose from birthmark in axilla which had been accidentally abraided and ulcerated a year previously Other tumors developed in the axilla which proved to be of the lymphatics The tumor was removed and it appears that the breast was not affected

Case 16 —M Marjolin *Bulletin de la Société Chirurgie* Paris, 1862, Vol iii, p 410 Female aged 57 Left axilla, small painless tumor several months duration This was extirpated and consisted of three distinct nodules The microscopic examination was made by M Robin He remarks that the tumors are of a very rare species His report, together with the clinical evidence and gross appearances given is almost conclusive that the case was one of primary carcinoma of the large sweat glands if interpreted in the light of today

Case 17 —R W Smith, *Dublin Medical Journal*, 1838, Vol xii, p 65 Female aged 30 A hard, movable, painless tumor appeared in right axilla Afterward the axillary vessels and surrounding tissues became involved One year and some months later a tumor was noticed in the breast. No operation Autopsy showed carcinoma of the stomach and other viscera The author reports the case as one of primary carcinoma of the axillary glands

Case 18 —M Marrotte *Jour de Méd. et Chirurgie*, Vol iv, p 107, 1831. Male aged 22 Tumor filled right axilla Extirpated and examined microscopically Report says several forms of cancer and cysts full of blackish fluid were found It is questionable whether this was not a case of sarcoma

In a given case of carcinoma, originating in and apparently confined to the axilla, established surgical principles imperatively require wide removal of integument, fat and lymphatic tissue from the axilla and of the latter two structures along the border of the pectoral muscles to the breast, whether apparently invaded by the disease or not, and in most cases some of the muscular tissue, as well But it becomes a very important practical question whether the breast itself should or should not be included in the operation It would be the safer course to remove the breast in all cases, but some exception can be made to this general rule consistent with good surgery, the question hingeing on the age of the patient, the extent of the disease, and the length of time it has existed

CONCLUSIONS

1 Primary carcinoma of the axilla is probably more frequent than the small number of recorded cases would seem to indicate

2 When present it originates, *a*, in the large tubular convoluted sweat glands peculiar to this region, *b*, in supernumerary mammary gland tissue more or less rudimentary, or *c*, in the true skin, and as to relative frequency in the order named

3 When the disease appears first in the axilla and later in the mammary gland the most satisfactory and the most logical explanation is that there has been retrograde infection through the lymphatics from the axilla to the breast

4 When the lymph glands and channels or other tissues between the axillary tumor and the mammary gland are at all infected, or suspected, the gland should be removed along with the tumor and the intervening infected tissues

5 In any case in which the breast is not removed it should be carefully examined at short intervals for the first manifestations of disease

DISCUSSION

Dr Charles A Powers of Denver—The practical importance *of this subject can not be overestimated, and it shows* that in addition to the removal of the primary neoplasms of the breast, those of the axilla should be subjected to the same management The rule is absolutely established that no part of the mammary gland is to be allowed to remain without a most thorough and careful examination It is well known by all surgeons and is becoming more and more appreciated by physicians and the laity Our success lies in early recognition and extirpation During the past year I have removed from the anterior axilla a nodule the size of a hen's egg Clinically differential diagnosis could not be made between a benign and a malignant growth, and the pathologist who examined this specimen called it a supernumerary mammary gland, which was the seat of the fibro adenoma, although it might just as well have been malignant

Dr Ochsner of Chicago—At the inner limits of the axilla, and the lower edge of the pectoralis major muscle, there is a point at which I have seen three carcinomatous growths, and in each one the nodule was first movable underneath the skin, consequently it could not have originated from the sweat glands in the skin, nor from anything except glandular tissue The only glandular tissue there would be a portion of the mammary gland, and cancer in this region can originate precisely as could epitheliomatous growths elsewhere In this particular location, if the points in its development are observed, it is perfectly plain that the cancer must come from a supernumerary mammary gland I have frequently found extensions of the mammary gland a considerable distance from the gland proper, and I cannot see why there should not be extension in the axillary direction as well as in any other Under these circumstances, the carcinoma would originate precisely the same as from any other lobule, only the lobule is slightly displaced

Dr A D Bevan of Chicago—There are two possibilities that must be borne in mind, one of which is the occurrence of a small primary focus of carcinoma, which is overshadowed by the secondary growth It may be that the primary growth is a very small nodule in the mammary gland, while the secondary mass may be in the axilla In one of Dr Hirschfelder's cases, there were extensive deposits of carcinomatous tissue in the prostate without any primary lesion I recently had a case in which I amputated the entire outer end of the scapula and clavicle for supposed sarcoma, but postmortem examination showed it to be a case of carcimona In these cases we must imagine one of two possibilities, first, that there was a small primary focus overshadowed by the secondary mass, or second, the encapsulation of a piece of epiblastic tissue which has developed into carcinoma

Dr J B Murphy of Chicago, Ill —In the cases observed by the author, I would like to ask if the tumor was situated deep primarily or superficial primarily, that is to say, was the skin movable over it in the early stages? Dr Ochsner laid great stress on this point. We all know that we can find carcinomatous growths in the sweat glands which may or may not have originated in the mammary glands, and every surgeon has noticed that suppurative foci may be found in connection with the skin Upon opening these tumors they will be found to contain a caseous material, and are largely made up of invaginated portions of the epiblast These cysts are very common and frequently do not appear to be attached to the skin

Dr William L Rodman of Louisville—I would like to report a case similar to Dr Graham's, which occurred in a male about 60 years of age, living in Jeffersonville, Ky , who was by occupation a ship carpenter The case was unquestionably one of scirrhous carcinoma of the axilla, which was removed, and as it was the first of the kind I had ever seen I followed it up until death This case bears out the remarks *of several of the speakers, and I am sure you will occasionally* find primary carcinoma in the axilla, although most of these cases are doubtless sarcoma Dr Bevan makes a good point when he states that a very small lump in the breast may be overlooked and the growth in the axilla considered as primary when it is really secondary All of us have seen cases of this kind, and I have had my attention drawn to it by patients As to the treatment of these cases, I can add nothing to what has been said by the essayist, but would like to insist even more strongly on one point, and that is the danger of infection of the lesser pectoral, which should be removed It seems to me that it is even more necessary in these cases to remove the glands than it would be the primary growth in the breast itself

Dr Graham, in closing—Referring to the microscopic findings in Dr Powers' case, it is stated that many cases of fibro adenoma, so called, originate in these sweat glands as well as in the axilla and the mammary gland, and it is probable that most fibro adenoma originate in these glands Dr Bevan's statement is exactly opposite to what I claim, and there is no reason to my mind why a focus in the prostate should not be secondary as well as primary It is true we may have a primary focus in the axilla I believe you will admit that we do have tissue in the axilla capable of giving rise to primary carcinoma, and one of my cases proves this With regard to Dr Murphy's questions, the integument in the second case I reported was movable over the tumor, while in the other case the mass was very large, and the skin was tense It must be remembered that these sweat glands are under the skin and not in it No doubt we can have a supernumerary mammary nodule in the male as well as in the female

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POST-OPERATIVE INSANITY

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association, held at Denver, Colo June 7 10 1898

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For want of a better term I have adopted this one to indicate certain mental aberrations following operations That very slight operations are not infrequently followed by severe attacks of insanity is beyond a question, at the same time the most severe operations on those who are insane are frequently followed by the return of their normal mental faculties

Why this unfortunate complication should follow certain operations in both male and female is a question which up to the present time has not been fully settled from a pathologic standpoint Statistics on this important subject are severely wanting, and it is believed on the part of the writer, that notwithstanding a few cases of post-operative insanity have been reported from time to time in the journals, a great many more have not been reported, possibly for the want of knowledge as to their cause, or maybe a hesitancy on the part of the operator to announce to the world that he has operated a certain case which has been followed by some form of insanity The fact that we do have these cases occurring and that their causes are illy understood is certainly a sufficient excuse for having selected this subject, the study of which we hope will throw more light upon this important clinical question

Among the few cases which have been recorded, the following is the synopsis of a case operated by Dr Sprague, published in the American Medico-Surgical Bulletin of May 2, 1896, in which he reports having operated a very nervous and hysterical case, which in childhood had been a subject of chorea At the time of the operation the patient had reached the age of twenty-four, and had given birth to two children, having sustained a laceration of the cervix and perineum at the time of the first birth, but outside of this misfortune her health was practically normal Without going into the details of the case, she was operated eight months after the second birth On the eleventh day after the operation she was taken with mania, her temperature at that time being 101 and continued to rise until it reached 106, when she died The writer states that during her entire illness she partook of a large amount of nourishment consisting of milk and eggs, that her urine was examined with negative results, that the patient never had a chill or chilly sensation, and that the only pus found was one drop about a very superficial suture, that she never had the appearance of a patient suffering from sepsis, the lips and skin being normal in color almost up to the time of of her death In closing his article he stated "now, was this a case of acute mania and meningitis due to her sensitive and nervous condition, or should we throw out entirely the nervous condition as a cause of her trouble and ascribe it to the results of sepsis? If the latter, was there sufficient pus to produce such violent results?"

In considering the main features of this case it is difficult to understand why this particular patient should have had an acute attack of mania with so small a quantity of pus, when other cases with large quantities of pus and often suffering from septicemia, do recover without any mental aberration

In referring to the records of the Protestant Hospital I find that my colleague, Dr J F Baldwin, operated a patient Sept 19, 1895, removing a hematoma of the right broad ligament in a lady, age 28, with good habits, normal urine, bowels regular, appetite good On the third day after the operation her temperature rose to 103, on the fourth day it dropped to 99¾, at which time she became delirious, but happily responded to the use of bromids and finally recovered from the operation Oct 9, 1895 The doctor informs me that he has had several cases of post-operative insanity but fortunately none of them had resulted fatally, and that in no case was he able to determine any particular cause for the mental aberration

Through the courtesy of Dr J Collins Warren and Dr G W Nicherson, the author was very kindly furnished with a report of the following case of "delirium nervosum" A German woman about 65 years of age, was operated Sept 23, 1895, by Drs Warren, Nickerson and Stone for cancer of the sigmoid flexure, producing intestinal obstruction The operation consisted in making an artificial anus The hospital reports show that on recovering from the anesthesia she seemed dull and drowsy, which was followed by restlessness and delirium continuing two days after the operation, when she became noisy, talking continually, but sleeping on an average of about eight hours a day She partook plentifully of nourishment Four days after the operation her mental condition changed from that of excitement to that of muttering delirium The sutures were removed on the fifth day but the delirium continued On the sixth day after the operation she became very nervous and had hallucinations which consisted in seeing and hearing parties around her On the thirty-second day she refused nourishment, on the thirty-ninth day she became hysterical and for a time was restless and sleepless On the forty-fifth day she assumed a melancholy mood, subsequently she became violent, but at other times almost rational

These extremes of mental aberration continued with little or no rise of temperature until she died, April 1, 1896, 190 days after the operation This case is interesting from its prolongation and the variety of hallucinations manifested When we realize the large number of cases that die from cancer without any hallucinations or mental aberration of any kind and on the other hand the large number of patients who suffer from fecal fistulas or an artificial anus, who likewise are free from any form of insanity, the question naturally arises, why should this particular case develop such marked conditions and what are the peculiarities that give rise to them?

The writer has had occasion to meet with several of these seemingly pathologic freaks, among which he might mention the following Mrs S M C, age 56, white, two children, the youngest about twenty six years of age, was an unusually strong healthy woman, and with the exception of a laceration of the cervix and perineum was in normal health Her family history was good, but owing to the long continued laceration of the perineum she became afflicted with prolapsis of the uterus She was admitted to the Protestant Hospital of Columbus, Ohio, June 24, 1895, and operated June 26, 1895, the operation consisting in freshening the edges of the uterus and suturing them in place and the usual operation for lacerated perineum The patient made an eventful recovery, and was about ready to return home when she was seized with a violent attack of mania, which became so severe as to necessitate her removal to the Columbus State Hospital for the Insane Her mental condition was so bad when taken there that Dr Richardson, the superintendent, despaired of her recovery, and for weeks looked upon her case as an exceedingly grave one, although there was no physical evidence associated with the operation that would indicate any cause for her mental aberration In the course of about three months she began to improve, and one day it dawned upon her that she had been insane, and she fully appreciated her surroundings, and remembered distinctly the hallucinations which had afflicted her during the three months previous, which consisted in imagining she was incarcerated in some jail in which she daily expected to be massacred Notwithstanding all the delusions, she has fully recovered, and today is in the enjoyment of her normal health and attending to her household duties As there was no pus infection in this case and no family history leading to insanity, it still remains a conundrum in my mind as to why such a severe attack of mania should have occurred after so trivial an operation, which was devoid of any complications

I recall another case which was operated at the Protestant Hospital, May 21, 1895, in which I removed the uterus and ovaries The patient made an uneventful recovery, but after returning home became melancholy, and for a time it seemed that it would be necessary to remove her to the insane asylum, as her melancholy changed to mania of a vicious charac ter The latter only lasted a few days, and in the course of a few weeks, I am reliably informed, her mental condition became normal, and at the present time she is in the enjoyment of good health In studying the history of this case I find that fifteen years prior to her operation she had a very severe attack of uterine hemorrhage which was suddenly checked and was followed by an acute attack of insanity, making it necessary for her to be taken to the insane asylum for treatment, where she remained some nine weeks, when she was dismissed in a convalescent condition During all this time she had suppression of the menses, three weeks after her return home the menstrual period was regularly established and her normal health returned, and no symptoms of mental derangement manifested themselves until after the operation above referred to

I will now report a case which is the reverse of those I have just mentioned Mrs N, aged 37, of German descent, was admitted to the Protestant Hospital, Nov 15, 1896, suffering from dementia of twelve years standing, dating from the birth of her last child At this time she sustained a laceration of the cervix, followed with fibroid degeneration of the uterus During a part of this time she was cared for in the Columbus Hospital for the Insane, and in 1892 had convulsions in connection with her dementia Three years prior to the operation, she received a fracture of the arm and immediately became a raving maniac Her case being a chronic one, Dr Richardson the superintendent, advised operative interference, and on Nov 18, 1896, I operated, removing both ovaries and the uterus The latter I found very much degenerated, while the tubes were atrophied and the ovaries had undergone cystic degeneration For a week the patient improved rapidly, her mental condition becoming very much better, the urine being passed through its normal channel, but at the expiration of this time a seepage of urine was discovered in the vagina, which aroused my suspicions lest I had by some mistake injured the ureter By more careful examination I found that by catheterizing the right ureter the urine obtained was normal, but in catheterizing the left ureter through the fistulous opening, the urine was loaded not only with pus but with albumin, leading me to the conclusion that there was degeneration of the left kidney and ureter Consequently on Dec 13, 1896, I made a nephrectomy of the left kidney, which I found enlarged and located abnormally high In order that no mistake might be made, assisted by my colleague, Dr Means, I passed the urethral catheter through the fistulous opening into the ureter and allowed it to remain there until I made an exploratory incision into the abdominal cavity, which developed the existence of a diseased left kidney, which was then removed by the lumbar operation, and was found to contain numerous cysts, many of which contained pus My patient made a rapid and uninterrupted recovery from this second major operation, and for a time the urine passed through its normal channel, but to my chagrin and surprise some three or four days after the operation I found the urine again seeping through the vagina, and on further examination discovered a calculus, which had evidently formed in the right ureter, producing necrosis and suppuration, and was finally broken up and removed through the vagina, thus leaving a fistulous opening Excepting this my patient still continued to recover, but I found that the continued irritation of the urine worried her, causing a return of the mental aberration

I again called counsel, consisting of Drs Baldwin, Means and Dunham, and it was decided that an effort would be made to implant the remaining ureter into the bladder The patient was prepared accordingly, and assisted by Drs Means and Baldwin, another abdominal section was made which not only developed the fact that the right kidney was abnormally small and located unusually high, and that the ureter was very large, with a fistulous opening at its lower end communicating with the vagina, but instead of the ureter passing over the psoas muscle and iliac artery immediately underneath the peritoneum, it passed under them, thus making operative interference doubly difficult Notwithstanding this the ureter was dissected out, when I found that it lacked an inch and a half of being long enough to be inserted in the fundus of the bladder I then proceeded to dissect the bladder loose from its moorings, but after having done that, the ureter was still too short, and I next proceeded to dissect the kidney loose and bring it down until I was enabled to implant it into the fundus of the bladder after which the kidney was anchored, the bladder sutured as firmly as possible to the abdominal parietes, the toilet carefully looked after to avoid sepsis, and the patient returned to her room to await results

Strange to say, notwithstanding that the patient was a debilitated, insane woman, she made a rapid recovery both physically and mentally, but in spite of all our care there was some leakage of the urine both through the abdominal and vaginal wound, which in the course of a few weeks ceased, and I am pleased to state that the patient is now reported doing her own housework, her mental condition normal and her physical condition very much improved

Owing to the fact that the cases thus far referred to were all females, it might be misleading in the study of this very important and mysterious subject In order that your minds may be disabused in this respect, I beg leave to briefly report one or two cases which occurred in the male

J D S, age 35, referred to me by Dr Hyde of Nelsonville Ohio, suffering from a stellate fracture of the patella, in which the latter had been broken into five fragments An operation was made at the Protestant Hospital in which the fragments were sutured together with heavy silk-worm gut and the knee joint thoroughly cleansed of blood clots and fragments of bone The patient made an uninterrupted recovery until the ninth day, when he was suddenly taken with an acute attack of mania, jumped out of bed and started through the ward, and it was only through the combined efforts of the nurses that they were enabled to get him into bed From that time on he was deranged and it was only by putting on special apparatus that we were enabled to keep him in bed At the time of his attack of insanity the wound looked perfectly healthy, but immediately following that it became inflamed and swollen, the exercise in walking through the ward and the efforts in getting him back into bed had evidently torn some of the fragments of the patella apart, which was followed by acute suppurative synovitis, septic infection, and in spite of free drainage and antiseptic treatment, resulted in death

This case was one of a strong, healthy man whose family history was good, and up to the ninth day and neck and bind it closely, and more closely, in one position

I have been obliged to come to this theoretic conclusion because I have been unable to find the records of a postmortem on one of these cases, made late enough after the operation to display exactly the final anatomic result in detail Now, if this is so, the question of securing a freely movable joint, even in a limited range, is a most difficult one, for any forcible motion will only be a fresh trauma which will require more cicatricial tissue for its repair, and anything short of a motion that will make the head move freely within its socket, will be only the stretching of tissue today, which will contract tomorrow, to be stretched again the day after This last is the method of Lorenz, and it is tedious, painful and it is reported to get but partially satisfactory results I have not practiced it myself for the reason I have already given, that I thought the late absorption of plastic effusions, under the stimulus of the active motions of the child, would slowly free the joint, but the three stiff joints that I have, out of my little series, have shown me that this tiresome after-treatment of the operative cases may be necessary

In my last case, a girl of 11 years, in whom the operation is not two and one-half months old, and whose hip was becoming progressively stiffer, I have, under an anesthetic, broken up adhesions and made sure of free motion During this manipulation there was no tendency to reluxation and the head moved freely in the socket, with but a little crepitation at one place From this operation I feel quite sure that it was the fastening of the head to the acetabular floor that limited motion, and that my task is to establish here a nearthrosis by the persistence of sufficient motion to prevent reattachment, to favor the development of a bursal sac and a pseudo-cartilaginous lining of the acetabulum similar to that in a true pseudo arthrosis sequent to a fracture of a long bone A second manipulation, under anesthesia, a week after the first, found the joint, which had been treated by passive motion and massage in the interval, free to move from full extension through 90 degrees of flexion, and through 20 to 25 degrees of abduction from the usual position, and this with less joint crepitation than formerly If this can be maintained a most satisfactory result will have been achieved In all of the manipulation of this joint with its restricted motion, it is interesting to note that it never once has resembled the restricted motion of hip-joint tuberculosis The two conditions, similar in the point of limitation of motion, have been otherwise markedly contra distinguished

In another case there has been reluxation of both hips Just when this occurred I can not say The child left the hospital in apparently good and satisfactory condition, and when I next saw her, a year later, the dislocation had recurred I suppose that, in this case, I had neglected the advice Lorenz gave me, to make big acetabula, but as I am to be permitted to repeat the operation this coming fall I will not theorize, but will wait to find out the cause at that time

In the last case of this series to be mentioned, but one of my comparatively early cases, I was quite unable to bring the femoral head down to the level of the acetabulum, and so I made an entirely new socket, the lower portion of which overlapped the upper portion of the real socket This was done in a relatively thin part of the bone and opened through the ilium into the pelvis, and into this hole the head was thrust This case suppurated and was tedious Under the patient and painstaking dressings and redressings of my associate in the case, Dr C M Armistead, the child finally recovered, but with an anchylosis The limb, however, is in a good position and is a thoroughly satisfactory means of support and progression

MANIPULATIVE REPOSITION

In this procedure the chief obstacle is in the disposition of the capsule at the acetabulum, for extending upward from the acetabular rim to the head in its luxated position, it lies directly over the hollow of the acetabulum and closes it except for a small and narrow slit at the upper part—a slit that is often so narrow that it will not, until it has been enlarged, permit the passage of the head The manipulation endeavors to tear this slit larger, but this definite object can not always be definitely accomplished, and the head may be placed in the acetabulum, but with a double layer of the voluminous capsule interposed, the head having failed to pass through the slit and having pushed the folded capsule before it If this occurs the disaster of reluxation is inevitable

There were ten hips in eight children on which manipulative reposition was attempted, the first having been done about nine months ago, and in nine hips the fact of reposition was apparently accomplished In one child, a girl 7 years old, who had bilateral dislocation, one hip was irreducible, the other was reducible, but its location in the acetabulum was so very insecure, probably because of the folded interposed capsule, that the idea of keeping it there was abandoned and the child reserved for operative reposition This has not yet been done In another case, a boy of 6 years, the reposition seemed to be accomplished, but the evidence was not satisfactory, and so an incision was made, the finger carried down to the capsule and the parts explored by direct palpation Quite a large hematoma was found just outside the capsule, and it was demonstrated that the femoral head was really in the acetabulum This was a simple incision with a finger thrust in it, but it suppurated, bacterioscopic examination showed the streptococcus and the child is yet under treatment The reposition has, however, been maintained and there is a little "shake motion" in the joint, but anchylosis must be the inevitable result Another case, comparatively easily replaced, became reluxated within six weeks, again probably because of interposed capsule, and in spite of being continually in apparatus—a plaster of-Paris spica—and in bed A second reposition seems, up to date, more successful, and the child has now begun to walk in her spica Another went her whole six months of splint restraint and a month of freedom from splints, and then reluxation occurred After a little interval of rest the reposition was repeated and splint restraint begun afresh The final result is now many months off In a small boy the reposition was accomplished and maintained for six months before the splint was entirely left off When the splint was definitely removed the whole limb became swollen and congested and flexed at the hip and knee The child was merely kept in bed and the condition gradually abated, but a certain amount of rigid flexion at the hip persisted, and motion was very much limited Under anesthesia the joint was shown to be free of anchylosis and reposition was maintained, but the long head of the rectus femoris and the neighboring fascia lata was very tense when joint extension was made A subcutaneous section of these was done and a plaster-of-Paris spica put on, and this is still in place In another little boy the present conditions seem to promise complete success and I have been much tempted to take off my splint—a little spica which does not reach below the knee—before my appointed time In this little splint the child runs and jumps and climbs, with a hardly appreciable catch in his step, and with perfect freedom and comfort He must, however, live out his predetermined time of splint restraint, and that will last another month At the time of changing the splints the facts of maintenance of reposition and freedom of joint motion have been established

I did not expect that the difficulty I had experienced in the operative cases with stiff joints, was to follow one in the manipulative reductions, but one joint, reduction having been done six months ago, comes out of splint treatment with the reduction stable, but the joint quite rigid in a position of slight flexion, slight abduction, and slight out rotation, and his gait is consequently very awkward This is the only one that has, at any time, presented such very definite rigidity after manipulative reduction, and the causation is a little obscure It is not unknown that exudations of lymph may take place in sprained joints, undergo organization and cripple joint motion (Moullin on Sprains, 42 et seq , Klemm, *St Peter Med Woch*, 1897, No 28, quoted by A J M S p 224, 1898) I found quite a hematoma just outside of one joint which I had replaced by manipulation, and then cut down on to verify my result It may be that the stiffness of this particular joint is due to some such cause, and it is being properly massed and subjected to passive movements with the result that it is gradually becoming more movable It is to be noted, however, that the shallow acetabulum throws the femoral head somewhat forward, and the outward rotators of the hip are adapted to the luxated position, and the reposition puts them on the stretch, and both of these conditions—in this case, at any rate—tend to cause an outward rotation of the limb

Finally, one little girl with a bilateral dislocation was subjected to manipulative reposition with apparent success, but this proved to be of but temporary duration A second attempt to reduce proved a failure on one side, and, while the head could be put into the socket on the other side, it could not be made to stay there I decided to repeat the operation I had done for the traumatic dislocation, and so I cut down on the left hip and found that in the original manipulative reposition the head had been put into the acetabulum but the double layer of capsule had intervened Section of this flap with a tenotome disclosed a very poor acetabulum, but one that could be used, and so the head was thrust in it, and the capsule overlapped at the point of section and the pelvic portion stitched to the femoral neck On the other side the incision of the capsule gave vent to 6-8 c c of dark synovia, as if a synovitis had been set up by the previous manipulations The acetabular pocket was more open but the slit needed to be enlarged for satisfactory reposition In this instance the slit cut in the capsule was sutured, the stitches being inserted some way back from the margin, so as to draw considerable of the capsule into a thick fold, and so strengthen it and lessen its extent In both cases gauze drains were used and superficial sutures of silkworm gut By this means I know I have the femoral head properly in the acetabulum, I know there has been no injury to the acetabular articular cartilage, and no special invitation for granulation tissue to develop, and to cause anchylosis, and I know that the disposition of the capsule is such that the upward thrust of the femur in supporting the body, must drive the femoral head deeper into, rather than out of the acetabulum These points are gained by neither the operative nor the manipulative reductions of Lorenz and Hoffa What may be the final result I can not say, but it ought to be a good one, and to favor that, and lessen all unnecessary adhesions and stiffness, early manipulations and passive movements are to be begun, as soon as the superficial wounds are healed I shall turn the child over to a masseuse

This recital of difficulties must not be taken as counting against the operation The reports, as they have come to us from Europe, have recited brilliant successes, and I have related my incomplete cases and my failures to indicate the difficulties that must be overcome, and the disappointments that may meet us Still, with the exception of one case where there is practical anchylosis of both hips, and the cases where reluxation occurred, each case treated has been markedly benefited, even though an ideal result has not been reached As these children grow the new articulation should become firmer, and the limb more useful for support and progression, and this is in direct contrast to the unreduced cases, in which increasing body weight causes stretching of ligaments and muscles and lessens, progressively, joint stability I have lately examined three women with unreduced dislocations, and their lives are being distinctly narrowed by the increasing difficulties in getting about It is right that we should try to save the children of today from being overtaken by that fate

DISCUSSION

Dr James E Moore of Minneapolis—Although this is a deformity that we are not likely to meet with every day, it is present all over, and I personally know of at least twenty five cases Experience has taught us that mechanical treatment is unsatisfactory, and very few cases have been reported where mechanical treatment has yielded satisfactory results, so that we are compelled to look for other methods Among the best are the operations of Lorenz and Hoffer , the former the bloodless, and the latter the bloody I have had but little experience with the bloodless operation, but on one occasion started in to do the bloodless and wound up by doing the bloody I had a very sad experience in this case, and the patient recovered with an anchylosed joint, so I would not advise trying to combine the two operations The technique is very simple, although the Lorenz operation is more complicated than the present one Dr Bradford advices that you begin your incision just below the anterior superior spinous process of the ilium, and cut downward and outward, making a longitudinal incision through the fascia lata The anterior margin of the tensor vagina femoris comes into view, and you cut right down upon the capsule at once You then make an incision into the capsule and cut around until you can turn the head of the bone out, separating it absolutely Failing to follow the proper point will cause much difficulty in finding the acetabulum It is only by having such men as Dr Sherman give us their results that we can begin to formulate our ideas

Dr Sherman, in closing—As to the substitution of the bloody for the bloodless operation, the injury that is done to the tissues in endeavoring to reduce the dislocation without incision is very great I have found hematoma in one case at the end of a week, and in every case, ecchymosis results If the laceration of the soft parts can be avoided the bloodless operation will give a more satisfactory result It is necessary to regard anchylosis of the limb in a good position as preferable to permanency of the dislocation and the usefulness of the limb is so much greater that it is worth while, as unreduced dislocations become progressively worse

THE TIME TO OPERATE IN APPENDICITIS

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Colo, June 7-10 1898

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For a long time the appendix and adjacent parts were distinguished as being the only structures in the human body where the known presence of pus was not an indication for its removal Ignorant of the etiology and pathology of the inflammatory diseases of this region, restrained by exaggerated ideas of the hazards of intra-peritoneal surgery, few surgeons had the courage to oppose this violation of a generally recognized law, and for many years, under various names, appendicitis received only those treatments that were purely medicinal, symptomatic and palliative, while the results depended alone upon the unaided reparative efforts of nature

But since the pathologist has conclusively proven that from the very nature of the disease, neither internal medications nor external applications *can* have any direct effect upon this disease, and that all clinical evidence to the contrary must of necessity be deceptive, and since modern methods and perfected skill have so nearly annihilated the dangers of intra-peritoneal surgery, the surgical conception of appendicitis, based upon the teachings of pathology, has gradually supplanted the old empiric treatment, which never has had any support, except unconfirmed clinical testimony

In taking this all-important step toward the proper management of an infected appendix, some have hesitated and wavered and are still reluctant to rely entirely upon the principles of modern surgery to guide them in their treatment, for they maintain that there *are* times and there *are* cases where an infected appendix should be left within the body Others regard this as a purely surgical disease, to be treated *always* in accordance with those surgical laws that hold good on other parts of the body Hence, a consideration of the time to operate in appendicitis always includes a discussion of the following question *Are experienced operators ever justified in recommending that an infected appendix be permitted to remain within the abdomen longer than is needed to make the necessary preparation for its removal?*

Arrayed on either side of this question are earnest, sincere men of the widest experience, whose opinions and judgment we all value and respect So long as this uncertainty and marked difference of opinion exists in the treatment of this very frequent, acute and grave disease, we can not hope to command or merit the full confidence and trust of the laity nor to be quite free at all times from doubts and misgivings ourselves, as to our choice of plans Until we are approximately in accord upon the main points of treatment, appendicitis will continue to be a proper subject for thoughtful consideration and reconsideration, alone and in discussion

In this paper I shall express as clearly and as briefly as I can the line of reasoning and thought that has led me to believe that *the known presence of an infected appendix within the abdomen is always an indication for its removal*

Appendicitis has its origin in an infection effectually imprisoned within the appendix, out of the possible reach of external or internal medication or natural drainage, cut off from the cecum by inflammatory occlusion of the canal and separated from the nearest external outlet by the parietal peritoneum, several layers of muscles and fascia and the skin This infection may be mild and limited, free from danger and causing but little distress, or it may be most acute and virulent, producing local and general changes most dangerous to life and health We are, as yet, unacquainted with any signs or symptoms that enable us to distinguish positively one grade or stage of inflammation from another This infection is in a useless organ that is easily and safely removable ordinarily, but which lies in dangerous proximity to tissues which are certain to be involved if the infection spreads This extension of the infection we are absolutely powerless to arrest except by surgical removal of its source Treated medicinally or left to nature, 10 per cent of all cases end fatally in the primary attacks and more than 25 per cent die ultimately The causes of death are systemic infection, peritonitis or obstruction of the bowels, hence the surgeon's aim is to prevent, arrest or limit septic absorption and local and diffuse infection of the peritoneum Local infection may occur either by direct extension of the inflammation or by sudden rupture of the distended or softened appendix, permitting the escape of its septic contents Diffuse peritonitis may be produced by the same causes, or by leakage from an appendiceal abscess A very large proportion of those who do not die suffer from recurrent or chronic appendicitis, or from the more or less remote effects of bowel or omental adhesions which occur to some extent in nearly every case

These, I believe, will be accepted as fair statements outlining the conditions which confront us in every case of appendicitis

In coping with these conditions those who retain their faith in modern surgical principles can not consistently recommend delay in operative measures, unless it can be satisfactorily explained just why—in this particular instance—they should deviate from a generally accepted law of surgery I take it that the advantage of any departure from general principles should be clearly proven by abundant and substantial evidence before an exceptional plan be adopted, and that in the absence of such proof the safer plan would be to follow the rules of surgery that hold good in other parts of the body

It is asserted by a majority of those who oppose immediate operation in all cases, that this infection had best be left within the abdominal cavity, unless it is apparent that the disease has not extended to or beyond the outer coat of the appendix, or that a local abscess has formed, with walls of requisite strength (in which case the abscess is opened, but the appendix is not removed if it form a portion of the abscess wall), or that all acute symptoms have subsided without pus formation, viz, between the attacks They maintain that by thus limiting their operative procedures they lessen the danger of post operative general peritonitis They also claim that as for various good reasons they operate less frequently, they have fewer distressing post-operative sequelæ, less suffering and hospital expense, with equally as good results as those who operate promptly Moreover, many assert that their experience and such clinical testimony as they can gather go to prove that 75 per cent of all cases do as well as or better when trusted to nature than when treated surgically The proofs offered in support of these opinions are largely made up from personal experiences, statistics, quotations from authorities and the testimony of patients

The chief reasons for operating promptly in appendicitis regardless of the stage, character or extent of the disease, presence of pus or tumor, or state of the pulse or temperature, may be briefly stated First, such a course is in harmony with the generally recognized law that the presence of infected, devitalized tissue and pus in the human body is an indication for its removal by the most direct and safest route

Second, as in this region nature s reparative methods involve the formation of more or less dense and extensive bands of adhesion which may impair or annul the functions of nearby vital organs, this mode of repair should not only be interrupted early, but should be followed by the breaking up of all adhesions and the removal, as far as possible, of all debris

Third, if this course was pursued in all cases as soon as the diagnosis was made, experienced operators would not expect the mortality to exceed 2 per cent Moreover, the 98 per cent or 99 per cent would be free from the apprehension of future attacks and the distressing effects of bowel, omental and mesenteric adhesions Such results are believed to be infinitely better than those of any other plan of treatment

Fourth, prompt operators believe that complete work is attended by less immediate danger and gives better ultimate results, while one of the rules of the delay operators is to leave the abscess wall intact, and frequently the gangrenous appendix is a part of this wall Such incomplete work promises an imperfect result even if the patient lives

Fifth, even if certain stages of the morbid process were known to present more favorable conditions for operative procedures we have no means, with our present knowledge, of recognizing these various stages or even of assuring ourselves that they will ever occur *For it is impossible to accurately determine the exact pathologic changes taking place under a rigid or distended abdomen, by any combination of local or general signs or symptoms* Few men of experience today would care to stake their professional reputation or their patients' lives upon their ability to discover a protruding enterolith about to escape into the peritoneal cavity, or to determine the exact strength of every part of an abscess wall Yet those who wait accept for themselves and their patients these chances for upon the safe imprisonment of this enterolith or other infection, and the maintained strength of this wall during their period of waiting depends the life of their patient

In reply to the remaining statements of the oppositionists the prompt operators declare, first, to advise that operation be done before the disease has extended beyond the appendix is *equivalent* to operating at the earliest possible moment after a diagnosis is made, second, to operate between attacks is an admission that the patient has been unnecessarily exposed to the dangers of previous attacks, and to choose this time is only better than to wait for future attacks, third, it is unreasonable to suppose—if an operation is needed at all—that neglect, delay and incompleteness are the factors likely to eliminate post operative or other complications and obtain better results than from prompt, complete work, fourth, their death rate can not be computed and must of necessity be a matter of guess work since many of their so termed cured patients still carry within their abdomens the remnants of a disease which may light up at any moment, fifth, it is admitted that 75 per cent of all cases of appendicitis do not die during an attack, even if not treated at all, but we are surely not justified in accepting a plan that results in the imperfect recovery of 75 per cent, when at our disposal is a plan that insures the complete recovery of 98 per cent, sixth, it is inconsistent to expect that a mortality which is conceded to be due to "too late operation" will be reduced by a treatment that means further delay

Furthermore, it is maintained that the evidence supporting the claims of those opposed to immediate operation, while not lacking in amount, is not of a character to lead us to depart from the general laws of pathology and surgery The testimony of patients, the report of clinical observations by competent men, statistics, and even the unsupported opinions of honest, experienced men, have a relative value, but when in opposition to the teachings of pathology that value is very much less than when it is in confirmation of such teachings

The testimony of patients, like that of all unqualified witnesses, is almost always unreliable Then, too, we get only the testimony of the living, who naturally feel bound to testify to the efficiency of any treatment connected with their recovery The fatal cases might tell a very different story if they could reappear upon earth The clinical observations of competent men certainly deserve some consideration, but we should remember that these observations to be of much value must extend over a period of several years in each case, or be strengthened by the assurance that no remnants of diseased tissue remain in the abdominal cavity Unless the appendix be removed, the fair way to report a recovery from one attack would be something like this "This patient has survived an attack of appendicitis, but we have every reason for believing that he will always be in danger of future attacks until the appendix is removed, and each attack renders the next one more likely to occur and the operation more difficult" Let each of those who have faith in the teaching of clinical experience ask themselves the following questions How many operations have I seen that in my own judgment were done too early? How many have I seen that proved to be too late? How many deaths and how much suffering has come under my observation that I honestly believe could have been prevented by timely and proper operations for appendicitis? Which of these chances shall I give my patient?

Statistics that include a large number of cases, with a description of the specimen removed, have a decided value, but no statistics, however voluminous, can be very convincing if they report under the head of recoveries, cases that still carry within their abdomens the original cause of the disease liable at any moment to light up a serious, perhaps fatal inflammation? The unsupported statements of so-called authorities are often quoted to bolster up this or that view of the treatment of appendicitis But this question has been prominently before the profession for consideration a number of years and such arbitrary statements, unless they appeal to our reason and common sense, can not, or at least should not, materially influence us either for or against operative interference

The above statements, to my mind, outline the chief points of this controversy that are deserving the consideration of those who are studying this question, not for the purpose of defending a pet theory, but in the hope of deciding upon a treatment for appendicitis that shall promise the most for their patients in the saving of lives and suffering It is customary, however, to introduce into these discussions other objections to the immediate operation, to which I will now make the briefest possible reference, for I believe that they should have little or no weight in influencing our conclusions The assumption that a prompt operator advocates a laparotomy for any and all right-sided pains is as absurd as the belief that an infective inflammation can originate in the pericecal cellular tissue It would appear to me quite immaterial whether what seems to us the best plan of treatment for a dangerous disease be named "radical" or "conservative," or whether those who propose or practice it be called "extremists" or "old fogies," "seekers after notoriety" or "arm-chair theorists" It can not concern the patient or doctor whether the plan of treatment be of ancient origin or the latest product of modern thought so long as it is effective It can not be important whether it gives nature or surgery the leading or subordinate part in the cure so long as it promises the best results Nor can I believe that we should be induced to advocate or practice an inferior treatment in order that poorly qualified and inexperienced men may safely employ it

It has been said that to be known as one who always operates in appendicitis means to forfeit a certain amount of prestige and popularity with the public This, if true is the public's misfortune, I think, and it should rest with them to correct it "Wholesale laparotomizing," "mutilating operations," "epidemic of ovariotomies" and other similar, meaningless and extravagant *expressions are rarely found in any logical* argument Neither these nor any other unfair reflections upon our ability or sincerity should deter us from pursuing that course which our best judgment dictates In appendicitis we have a condition, not a symptom nor a group of symptoms, to treat this condition is an infection of the appendix and perhaps the surrounding structures, which when treated medically or left to nature has been shown to have a death rate in first attacks of 10 per cent and an ultimate death rate of 25 per cent The application of the same surgical principles that hold good in other parts of the body, viz, the prompt and complete removal of the infection promises a perfect recovery in 98 per cent of all cases The question is whether any treatment involving delay in the removal of this infection promises to reduce this 2 per cent. mortality The waiting for a more favorable time to operate means, as I comprehend it, the subjecting our patients to ever-present real dangers while we wait for those fancied (at least unproven) favorable conditions which may never arise, and which, should they arise, we are unable to recognize, all for the purpose of doing a more or less incomplete operation that must promise a proportionately more or less imperfect result

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Eye Strain—Dr Aaron Howell in the *Medical Bulletin* (Vol xx, No 4), gives the following as symptoms of eye strain Pain in the temporal region and in the back of the head and neck, red eyelids, also an inability to see at a great distance or *to read at a long* time, blurred vision, strabismus, a tendency to photophobia twitching of the eyelid, along with sick headache and dizziness when shopping, riding or attending places of amusement. He refers to chorea and other neuralgic symptoms as a possible outcome The remedy lies in the proper adjustment *of* lenses by a painstaking and intelligent adviser

THE TREATMENT OF INOPERABLE SARCOMA WITH THE MIXED TOXINS OF ERYSIPELAS AND BACILLUS PRODIGIOSUS

IMMEDIATE AND FINAL RESULTS IN ONE HUNDRED AND FORTY CASES

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association, held at Denver Colo, June 7-10, 1998

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(*Concluded from page 395*)

The remaining personal cases worthy of special note will be found in tabulated form

HISTORY OF THE MORE IMPORTANT CASES SUCCESSFULLY TREATED BY OTHER SURGEONS

Case 1—Inoperable sarcoma of pectoral region and axilla Entire disappearance after seventy eight injections Patient perfectly well two and one half years later

This case is of the greatest interest, for it alone, unsupported by a single other case, would prove the specific action of the toxins

This case, female, aged 42 years, was a patient of Drs M Storrs and R. H. Griswold of Hartford, Conn, and was treated by them under my direction Her paternal grand mother died of cancer of the breast. There was no specific or tubercular history The patient had been well up to October, 1895, when she noticed a lump in the left pectoral region It grew rapidly and soon extended into the axilla On Dec 15, 1995, it had become so large and adherent to the axillary vessels that after a consultation of several prominent surgeons it was considered inoperable A portion was removed and examined microscopically by Dr R Griswold, and the diagnosis of spindle celled sarcoma was made The diagnosis was further confirmed by Drs Dunham and Buxton, pathologists to the New York Cancer Hospital, and finally by Prof Wm Welch of Johns Hopkins University Seventy eight injections of the mixed unfiltered toxins were given during the next three months, and at the end of this time the tumor in the pectoral region and axilla had entirely disappeared and the patient had regained her normal weight, having lost twenty four pounds since the appearance of the disease The patient was presented by me before the New York Surgical Society in November, 1896, in *perfect* health without a trace of tumor or induration in breast or axilla She is still perfectly well, with no sign of recurrence, two and one half years later

Here we have a rapidly developing and hence highly malignant sarcoma pronounced inoperable by four surgeons, the diagnosis confirmed by three pathologists of the highest reputation, and moreover, the type of tumor, one that Professor Welch states cannot be mistaken for anything else, entirely disappear under nothing but the injections of these toxins, and, more than all, remain well for nearly three years

Case 2—*Inoperable spindle celled sarcoma*, *involving the* palate and fauces, entire disappearance under the mixed filtered toxins, the patient well and free from recurrence four and a half years later This case was treated by Dr Walter B Johnson of Paterson, N J I saw the patient, in consultation, before the treatment was begun, in October 1893, and can bear witness to the desperate condition that existed. The diagnosis of spindle celled sarcoma was confirmed by careful microscopic examination, although the condition was so typical of malignant disease that the clinical diagnosis was practically certain Improvement was at once evident, and the growth steadily disappeared until no trace remained The patient has continued in perfect health up to the present time, four and a half years after the treatment.

A full report of this case, with illustrations, may be found in the *Medical Record* of Nov 17, 1894

Case 3—Spindle celled sarcoma of the calf of the leg, entire disappearance under twelve weeks' treatment with the mixed toxins Case No 1, of Dr L L McArthur, Attending Surgeon, St Luke's Hospital, Chicago, Ill The patient, female, aged 40 years, entered St Luke's Hospital in the spring of 1894, for a removal of a tumor of the leg Operation showed the tumor to spring from the dense fascia covering the muscles and calf Although a very radical operation was performed, recurrence was regarded as probable, in the event

Table of personal cases in which the sarcoma disappeared entirely or nearly with final result

No	Sex age	Date	Nature of Disease	Treatment	Result	Remarks
1	M, 35	May 4, 1891	Recurrent spindle-celled neck and tonsil (inoperable)	Repeated injections living bouillon cultures erysipelas, four months	Tumors nearly disappeared general health restored	Well six years later
2	M, 40	April 1892	Round oval and spindle celled back and groin (inoperable)	Living cultures later mixed toxins (L)	Entire disappearance well three and one fourth years	Recurred in abdomen fatal
3	M, 17	Jan, 1893	Spindle celled abdominal wall and pelvis (inoperable)	Mixed toxins filtered (L)	Entire disappearance	Well May 1898 five years
4	F, 29	Oct, 1893	Spindle-celled abdominal wall (inoperable)	Mixed toxins, filtered and unfiltered (B)	Entire disappearance	Well June 1 1898 four and one half years
5	F, 17	Jan, 1891	Recurrent spindle celled popliteal space and leg	Toxins unfiltered and filtered (B)	Entire disappearance, 1½ years recurred later, amputation further recurrence in gluteal region treated with toxins up to present time	Well June 15 1898
6	F 34	June 1894	Inoperable epithelioma of chin lower jaw, floor of mouth	Toxins unfiltered three months	Disappearance	Well four years
7	F 16	June 23 1894	Inoperable spindle celled sarcoma of chest wall	Toxins unfiltered four months]B)	Entire disappearance	Perfectly well June 28 1898
8	M 24	March, 1891	Very large chondro sarcoma, ilium	Toxins, unfiltered, six weeks (B)	Disappearance recovered general health	Recurred 7 months, died one year later
9	F, 27	Oct 1894	Round celled sarcoma mesentery and gall bladder	Toxins unfiltered five months (B)	Disappearance	Well three years later
10	M 38	May 11 1895	Inoperable sarcoma, sacrum (clin diagnosis)	Toxins unfiltered, six months (B)	Entire disappearance	Well three years later
11	F, 20	Feb 18 1896	Recurrent spindle celled sarcoma of hand	Toxins, unfiltered and filtered, two months (B)	Disappeared two months	Slight recurrence two years later yielded to further treatm t
12	F., 18	Jan 17 1897	Inoperable spindle celled, of abdominal wall	Toxins, unfiltered, six weeks (B)	Entire disappearance	Well May, 1898
13	F 8	Feb 1897	Recurrent round celled lower lip	Toxins unfiltered six weeks (B)	Disappearance	Well June 1, 1898
14	M 40	Aug 1897	Recurrent spindle celled parotid and neck	Toxins unfiltered three months (B)	Entire disappearance	Well June 1, 1898
15	F 46	Nov 1895	Spindle celled intra abdominal	Toxins unfiltered 6 weeks 2 months 2 months (B)	Entire disappearance recurrence later nearly disappeared	Well November, 1897
16	M, 14	Apr 10 1897	Rapidly growing inoperable sarcoma of iliac fossa (clin diag)	Toxins unfiltered several months (B)	Very rapid improvement, tumor disappeared	Well June 1, 1898
17	F 32	Jan 1897	Thrice recurrent sarcoma of the parotid, mixed-celled	Toxins unfiltered and filtered several doses six months (B)	Marked decrease in size nodule excised	Well June 23 1898
18	F 59	Jan 20 1895	Angio sarcoma, recurrent inoperable breast	Erysipelas and B prodigiosus serum 6 mos toxins filtered few weeks (B)	Decrease in size, excision	Well May 1896
19	M, 37	Nov 4 1894	Eight times recurrent spindle celled sarcoma of chest wall (soft parts)	Toxins unfiltered and filtered with introductory small doses 3½ yrs (B)	Marked inhibitory action two or three small nodules removed	Well June 1 1898
20	M 55	June 1893	Large inoperable round celled sarcoma of iliac fossa	Toxins unfiltered and filtered at intervals, nearly one year (B)	Tumor nearly disappeared	Well one year later, when lost sight of
21	M 32	Nov 1895	Large inoperable recurrent tumor of upper lip Diagnosis Fibro angeioma	Toxins unfiltered one month (B)	Tumor disappeared	Well two years later

(B)—Prepared by Dr B H Buxton (L)—Prepared by Dr Alexander Lambert

of which amputation was advised Seven months later, September, 1894, the patient returned to the hospital with a local recurrence the size of half an egg bulging from the calf of the leg Inasmuch as the patient was several months pregnant, it was thought best to try the effects of the mixed toxins before resorting to amputation The treatment was continued for twelve weeks with the result that the tumor entirely disappeared Microscopic examination showed the tumor to be a spindle celled sarcoma The patient remains well at present, three years afterward

Case 4 —Osteo sarcoma of the lower end of the radius, three times recurrent, entire disappearance of the tumor under three months' treatment with the mixed toxins Case No 2 of Dr L L McArthur This patient, adult, male, was admitted to the Michael Reese Hospital for recurrence in the cicatrix of a bony tumor situated in the lower end of the radius The patient stated the growth had been pronounced sarcoma by Dr C Fenger Amputation having been refused, the tumor had been removed as thoroughly as possible Four months later recurrence followed and a second operation was performed by Dr Edmund Andrews of Chicago The original diagnosis was confirmed Rapid recurrence followed A third surgeon, Dr D A K Steele, was consulted, and again amputation was advised and refused The patient then consulted Dr McArthur, who regarded the diagnosis as undoubtedly correct and also advised amputation The patient absolutely refused operation, and under these conditions Dr McArthur agreed to try the effect of the mixed toxins The treatment was begun in April, 1895, and the injections were kept up for three months, with the result that the tumor had entirely disappeared at the end of this time The patient has remained well up the present time, June, 1898, Dr McArthur states there has been no recurrence Although no microscopic examination was made in this case, the fact that the tumor promptly recurred after several operations, renders the clinical diagnosis of such well known surgeons scarcely open to doubt

Case 5 —Osteo sarcoma of tibia, round celled (giant), three months, treatment with the mixed toxins, entire disappearance, well three years afterward Dr John E Owens of Chicago reported the following successful case before the Illinois State Medical Society, May 1, 1897 The patient, a boy aged 7 years, received an injury to his leg in July, 1894 In December, 1894, a tumor appeared at the site of the injury in the upper portion of the tibia In March, 1895, an exploratory operation was performed showing a tumor involving the medullary canal Microscopic examination was made by Dr E R LeCount, Pathologist to Rush Medical College His report showed the tumor to be a round celled myoloid or giant-celled sarcoma "On account of the very high vascularity," he stated, in his report, "judging this to be a rapidly growing tumor, its malignancy is unquestioned" Amputation of the thigh was advised and, in fact, everything was prepared for operation, when Dr Owens, at my suggestion, decided to try the toxins for a brief period The treatment was begun April 10, 1895 and continued until July 10 at intervals of one to two days The affected leg gradually returned to its normal size, the tumor disappeared, and in a recent letter, dated June 10, Dr Owen states that the patient is still in good health, free from recurrence, more than three years afterward

Case 6 —Extensive inoperable, intra abdominal sarcoma, successfully treated with the mixed toxins Case of Dr Herman Mynter of Buffalo, a full report of which may be found in the *New York Medical Record* of February, 1895 The patient was a girl, 12 years of age There was a history of local injury two or three months prior to the development of the tumor in the abdomen The condition of the patient when the treatment was begun was desperate Diagnosis was confirmed by exploratory laparotomy, and microscopic examination of a portion of the tumor showed the growth to be a spindle celled sarcoma The tumor entirely disappeared and the patient, according to a letter from Dr Mynter, dated May 25, 1898, is in good health at present It is very important to note that this cure was effected through the systemic action of the toxins, all of the injections having been made in the thighs The duration of treatment was six weeks, large portions sloughed off and came away through the abdominal incision

Case 7 —Inoperable spindle celled sarcoma of the uterus, successfully treated with the toxins Case of Dr R M Stone, Omaha, Neb My former paper contained a brief reference to this case, which was subsequently published in full in the

TABLE OF CASES TREATED BY THIS METHOD BY OTHER SURGEONS WITH COMPLETE OR PARTIAL SUCCESS

No	Reference	Sex, age	Date	Nature of Disease	Treatment	Results	Remarks
1	Johnson, W B, N Y Medical Record, Nov 17 1894	M, 16	Oct 31, 1893	Very extensive spindle celled sarcoma of palate and pharynx, extending to vocal cords	Toxins filtered, 3 months' treat (local) (B)	Entire disappearance	Well May 1898, 4½ years later
2	Mynter Herman, N Y Medical Record, Feb 1895	F, 12	July 22, 1891	Very extensive inoperable, spindle celled intra abdom sarcoma, involving mesentery omentum and cecum	Toxins filtered, 2 months, in thigh	Entire disappearance	Well June 1898, 7 years later
3	McArthur L L Chicago Med Record, 1895 p 120, and pers communication	F, 10	Sept, 1894	Recurrent spindle celled sarcoma calf and leg	Toxins unfiltered, 12 weeks (B)	Entire disappearance	Well May, 1898, 3½ years
4	Ibid Personal com	M, adult	May, 1895	Three times recurrent sarcoma of radius, clin diag, amputation advised by Dr Christian Fenger	Toxins unfiltered (B)	Entire disappearance	Well, 3 years
5	Ibid Personal com	F 5½	1895	Round celled sarcoma of antrum and pharynx and neck	Toxins unfiltered (B)	Gained in weight from 37 to 60 pounds, tumors disappeared	Later, fatal recurrence
6	Owens, J F Prof Surg N W Univ Chicago New Orleans Medical and Surg Journal July, 1897	M, 7	Apr 10 1895	Typic (round) giant celled sarcoma dep't pathology, Rush Med College	Toxins unfiltered 68 injections (B)	Entire disappearance, gen health improved	Well May, 1898 3 years
7	Barber, C R, Syracuse Personal communication	M 35	1894	Very extensive intra abdominal sarcoma, recurrent, inoperable, mesentery and omentum, no microscopic examination	Toxins unfiltered	Immediate and rapid improvement, entire disappearance of tumors, gained 40 lbs in weight	Well 4 years later
8	Storrs, M pers'l communication, N Y Surg Soc Report Annals Surg 1897	F, 42	Dec 1895	Inoperable spindle celled sarcoma of pectoral region and axilla	Toxins unfiltered seventy eight injections (B)	Entire Disappearance	Well June 1, 1898, 2½ years later
9	Czerny, Heidelberg Munch Med Woch, 1895	M adult	1895	Round celled inoperable sarcoma of parotid, size of fist	Toxins unfiltered 18 injections	Tumor reduced to insignificant nodule, easily excised	No recurrence, nearly one year later
10	Stone R M Med Record, November, 1896	F, 40	Dec, 1895	Spindle celled sarcoma uterus, recurrent	Toxins unfiltered, 3 months (B)	Entire disappearance	Patient well 2½ years later
11	Packard Horace Prof Surg Boston Uni "Five Years in Surgery," also personal com	F, 39	Aug, 1895	Recurrent spindle celled sarcoma of parotid	Toxins unfiltered, 8 months (B)	Almost entirely disappeared, remaining small nodule excised Oct 16,'95	Well May, 1898, 2¾ years
12	Ibid	F, 15	May 4, 1896	Inoperable endothelial sarcoma of pelvis	Toxins unfiltered several wks, (B)	Entire disappearance	Well May, 1898, 2 years
13	Ibid	F, 55	May, 1896	Inoperable intra abdominal sarcoma, spindle celled	Toxins unfiltered (B)	Entire disappearance	Well May 1898, 2 years
14	Warren, J C Prof Surg Harvard Med School Bost Med and Surg Jour Dec 26, 1896	M adult	1896	Round celled sarcoma of neck recurrent	Toxins unfiltered twenty eight injections (B)	Entire disappearance	*Slight return 6 mos April, '98 recurrent tumor in neck*
15	Matagne H, Gaz Méd de Liège May 14 1896	F	1895	Recurrent sarcoma of neck	Toxins unfiltered, 3½ months	Disappeared entirely	Slight return in six months
16	Ibid Gaz Méd de Liège, May 14, 1896		1895	Recurrent sarcoma of neck size fetal head	Toxins unfiltered, 3 months	Decreased ⅓ in size	Died of shock follow- removal of rest of growth
17	Moullin, Mansell (London) Lancet Feb 5, 1898	M, 28	Dec 1895	Inoperable tumor of iliac fossa, clin diag sarcoma	Toxins unfiltered 2 months (B)	Disappearance	Well 2 years later
18	Moullin, Mansell (London). Lancet, Feb 5, 1898	M, 58	Nov, 1896	Large tumor, left iliac fossa and flank sarcoma, clin diag	Toxins unfiltered, 2 months	Disappearance	Well 2 years later
19	Moullin, Mansell (London), *Lancet, Feb 5, 1898*	M 28	Oct, 1895	Large inoperable tumor of hip, four months' duration severe pain	Toxins unfiltered several weeks	Disappearance	Well 1 year later
20	Wilcox, Sydney N W Journ Homeopathy, Jan 1896	F, 30	June 1, 1895	Myxo sarcoma, round celled, left forearm	Toxins unfiltered 2 months (B)	Tumor disappeared	Well Nov 3, 1895
21	Shield A Marmaduke British Med Journal Jan 23, 1897	F, 44	April 3, 1896	Inoperable round celled sarcoma of breast myeloid recurrent *6 mos after operation*	Toxins unfiltered, 17 days	Nodules disappeared, breaking down, slough	*Died of pyemia,* staphylococcus infection fluid sterile
22	Williams D H L, Rochester N Y Personal communication	F., 37	April 1896	Inoperable intra abdominal sarcoma, involving abdominal wall spindle celled	Toxins unfiltered 1 month (B)	Tumor disappeared, partly by slough, partly by absorption	Well 2 years
23	Tilly R *Chicago* Personal communication	M adult	Aug 1894	Sarcoma orbit, round-celled	Toxins unfiltered 3 weeks (B)	Entire disappearance	Died suddenly few weeks later
24	Moore J A, Helena Mont Personal communication	M, 31	April 4, 1894	Sarcoma mastoid, size goose egg	Toxins unfiltered *2-3 months (B)*	Entire disappearance	Slight recurrence 2 *years later*
25	Moore J A, Helena Mont Personal communication	F, 31	Jan, 1894	Supra clavicular multiple round-celled sarcoma, recurrent	Toxins unfiltered, 1 month (B)	Entire disappearance	Return soon
26	Jackson, J A F I Lewis Central Wisconsin Med Soc Transactions 1897	F, 26	Sept 1896	Inoperable sarcoma of breast clin diagnosis *Dr Christian Fenger*	Toxins unfiltered (B)	Disappearance	Died 1 year later metastatic tumor of rectum
27	Battle W H St Thomas Hospital London, Lancet April 9 1898	M, 30	June, 1897	Tibia sarcoma multiple, arm axilla, supra and infra clavicular pectoral region, micro exam by Shattock	Toxins unfiltered 4 months	Entire disappearance of all except two, and these mostly disappeared	Case shown Medical Society of London April 4, 1898
28	Rumbold T F San Francisco Personal communication	F., adult	Aug 14, 1894	Recurrent round-celled breast	Toxins unfiltered, *1 month (B)*	Tumor disappeared	Died of internal metastasis, confirmed by autopsy
29	Kocher, quoted by Glückmann	F adult	1895	Large recurrent sarcoma, pelvis	Toxins unfiltered *(Tavel Berne)*	Marked decrease in size	Increase again within a year
30	Ferguson H A Chicago Personal communication	M adult		Sarcoma of tibia, round-celled	Toxins unfiltered	Entire disappearance	Well June 1898
31	Hardenbergh D B Middletown N Y Personal communication	M 48	May 28, 1897	Inoperable tumor of iliac fossa attached to ilium, no microscopic examination	Toxins unfiltered 3 weeks	Entire disappearance	Well May 16, 1898
32	Harris M L Chicago Personal communication	F, 31	Oct, 1897	Recurrent inoperable round celled *sarcoma of ovary* involving rectum, very rapid growth	Toxins unfiltered 4 weeks inj to xl in arm	Very marked improvement decrease in size of tumor final sloughing of entire tumor	Died Nov 17 *from* septic absorption of sloughing tumor
33	Walton J C Reidsville N C Charlotte Medical Journal, May 1898	F adult	May 18, 1895	Large sarcoma of fibula, amputation of thigh advised but refused by patient	Toxins unfiltered *2½ months (B)*	Entire disappearance	Well 3 years later
34	Moullin, Lancet Feb 5 1898	F 20	Oct 9, 1896	Recurrent round and spindle celled sarcoma of superior *maxilla, involving orbit*	Toxins unfiltered, 5 weeks daily, local	Tumor sloughed away, apparent cure of local disease but possible recurrence in tibia	Dec 1897, no local recurrence
35	Zabriskie F H, Greenfield Mass Personal com	F, 40	1896	*Recurrent* spindle celled sarcoma intra abdominal	Toxins unfiltered with intervals of rest 1 year +(B)	Tumor almost entirely disappeared	Patient well July, 1898, nearly 2 years
36	Roe John O, President Med Soc State of New York Personal communication	M adult	May 1894	Recurrent sarcoma of neck and tonsil "adeno sarcoma," inoperable	Toxins unfiltered (B)	Improved rapidly, tumor almost entirely disappeared	*Six months later developed erysipelas of scalp, proved fatal in a few days*

(B)—*Prepared by Dr B H Buxton*

NOTE—I have incomplete notes of another case of carcinoma of superior maxilla successfully treated

New York Medical Record, 1896 The patient Mrs B , aged 46 years had lost fifteen pounds in weight, the right broad ligament was markedly infiltrated The disease had progressed so far that hysterectomy was not to be considered—three surgeons who had seen her in consultation, regarding the case as absolutely hopeless The toxins were begun on Dec 6, 1895, and continued for two months with the result that the tumor as well as the infiltration of the broad ligament disappeared The patient regained her usual health She is at present, June 15, 1898 (two and a half years afterward), in perfect health without any evidence of recurrence Upward of one hundred sections of the tumor were examined by Dr W R Lavender, Professor of pathology to the Omaha Medical College, who made the diagnosis of spindle celled sarcoma

Case 8 —Inoperable sarcoma of the parotid successfully treated with the toxins, Case No 3 of Dr Packard This case has been briefly reported by Dr Packard in his "Five Years Work in Surgery," published in 1896 The tumor had recurred one year after previous operation Further operation seeming hopeless, the injections of the mixed toxins were begun in May, 1895, and continued for several months The tumor gradually decreased in size until only a small nodule remained This was excised, and without further treatment the patient has remained in perfect health up to the present time, upward of three years

Case 9 —Intra abdominal sarcoma successfully treated with the toxins —Dr Packard's case No 2 Mrs W , aged 55 years was admitted to Newton Hospital on April 14 1896 Five years previously an abdominal hysterectomy had been performed The stump was treated externally Several weeks before her admission to the hospital in April, 1896, a sinus formed in the region of the old scar On May 13 an exploratory operation was performed under ether, and a large, friable mass was discovered in the pelvis, suggesting malignant disease Portions were removed and examined by Dr Batchelder, who pronounced the growth to be sarcoma The tumor was very vascular For some time afterward there was marked tendency to hemorrhage and a constant fecal discharge from the sinus On May 22, one minim of the mixed toxins was injected into the skin in the vicinity of the sinus The dose was gradually increased up to 15 minims daily without any increase in pulse or temperature The treatment was discontinued for two weeks and resumed in July, and continued in slightly increased doses until the early part of August, when the patient was discharged. She had gained markedly in strength and general health, and the fecal fistula had closed and the other abdominal symptoms disappeared She returned to her home in a neighboring State and one year later reported herself well

Case 10 —Spindle celled sarcoma of the omentum successfully treated with the toxins —Dr Horace Packard of Boston, has recently sent me the following notes The patient, male, 58 years of age, was referred to Dr Packard early in 1898 for the surgical treatment of a painful, movable abdominal tumor, located to the left and a little above the line of the umbilicus He had emaciated progressively, was able to take but little nutriment, and pain had become constant and excruciating Exploratory incision was made and there was found a malignant growth of the omentum about four to five inches in length, two to three inches in breadth There were several secondary nodules in the vicinity A portion of the tumor was removed for microscopic examination and the wound closed The specimen removed showed the growth to be a spindle celled sarcoma. The patient was immediately placed upon the unfiltered toxins, which were continued, with occasional intervals, for three months Although the doses were small (1 to 2 minims) the reactions were severe, causing marked prostration After the treatment had been continued for a month, it was allowed a respite of four weeks The patient's general condition was vastly improved and the tumor had appreciably diminished in size , the pain had entirely left him and he looked and seemed well When last seen by Dr Packard the patient seemed in excellent health, and the tumor could be scarcely felt.

Case 11 —Inoperable spindle celled sarcoma of the uterus recurrent—entire disappearance within nine months after the treatment was begun Patient of Dr H T Williams of Rochester, N Y The patient, female aged 37 years Canadian by birth, married nine years, no children. Menstruation began at 16, regular and normal in amount. Dysmenorrhea for past twelve years. The patient was first seen by Dr Williams, April 16, 1891. The patient noticed a growth in the abdomen six years ago, since which time it has gradually increased in size Her health was fair Diagnosis uterine fibroid May 31, 1891, abdominal median incision Large smooth fibroid of uterus , sound passed nine inches Numerous adhesions in view of which latter it was considered best not to hysterectomy but to try the effects of spaying Both tubes and ovaries, which were large and cystic, were removed as close to the uterus as possible Catgut used to ligate pedicles Recovery from operation without disturbance Nov 21, 1891, menstruation more regular and much less profuse Uterine sound passed five inches May 19, 1892, periods every four weeks and almost normal in amount , sound passed four and one half inches Patient had been gaining flesh She was then lost sight of until March, 1896, when she again came to Dr Williams complaining of pain in right side and saying that she felt another tumor Examination showed a large, hard tumor about the size of two fists in right side of abdomen, and upon vaginal examination it appeared to spring from right horn of uterus The tumor was not very movable and seemed to be attached to abdominal muscles March 24 1896, exploratory incision through abdomen revealed a large elastic tumor apparently originating in right pedicle, extending into abdominal muscles and adherent to intestines As operation would have had to be a very extensive one, involving the removal of a large amount of abdominal muscle with the growth and probably resection of the intestines, it was not deemed possible that the patient could survive it. A portion of the tumor was removed for microscopic examination which showed it to be a spindle celled sarcoma The abdominal wound was closed with eight silver wire sutures and healed by first intention The tumor increased rapidly in size and a month after exploratory incision it projected several inches above the surface of the abdomen April 24, 1896, 3 minims of the mixed toxins of erysipelas and bacillus prodigiosus were injected into the center of the tumor The reaction was very great, patient had a severe chill, went into collapse, and brandy with strychnia with salt solution per rectum and hypodermically, were required before she rallied, which she did a few hours later Temperature had risen to 106 degrees but after a few hours had dropped to 100 degrees and next day was normal, but patient felt very much exhausted

April 28 1896, 1 minim of the toxins was injected into the tumor about an inch below the point of first injection The symptoms of April 24 were repeated, but less severe, the temperature rising to only 103 degrees. The patient declared she would rather die than have any more injections , however, she was *finally persuaded to permit another injection of 1 minim of* the toxins on May 1, 1896 Reaction was less severe, temperature reaching but 102 degrees On May 5, 3 minims were injected, causing a temperature of 103 degrees and slight chill On May 8 and 14, 3 minims were given and were followed by considerable reaction, but temperature was not high. May 18, 1896 4 minims were injected, causing a very severe prolonged chill and a temperature of 105 4 degrees F The patient felt extremely weak for some days afterward After each of the previous injections a slight erysipelatous blush had appeared around the point of injection but disappeared after a few days This time an area of three to four inches in circumference of bright red color appeared Poultices were applied to it and in a few days it turned black in the center and a slough about the size of a silver half dollar came away, leaving a hole of two to three inches in depth in center of tumor The patient positively refused to have any more of the toxins used This opening discharged for several months but the tumor grew rapidly smaller Eight months later it had entirely disappeared The patient was examined by Dr Williams one year later and no trace of growth could be detected she has gained considerable flesh and felt well She is at present June, 1898, two years later, in good health.

Case 12 —Intra abdominal sarcoma successfully treated with the toxins Case of Dr Chas R Barber of Rochester Patient, male, born in Germany, 35 years of age, well developed, began to have indigestion in October, 1893 In the spring of 1894 he began to emaciate rapidly, and shortly afterward a mass was found a little above and to the right of the umbilicus and settled in the epigastrium In May, 1894, his weight had fallen from 180 to 125 pounds On June 16, 1894, exploratory operation was performed by Dr Barber He states "It proved to be a case of cancer—probably sarcoma, on account of rapid growth—of the omentum, involving the surrounding parts, forming attachments with the intestine, bladder and parietal peritoneum " A large portion of the cancerous mass was removed The patient made a rapid recovery and for a few weeks seemed better On August 1, six weeks later, the growth began to increase rapidly in size on the right side of the cicatrix and over the right lobe of the liver, involving the abdominal muscles On August 25 a second operation was performed and apparently all of the diseased tissue removed Recurrence very quickly followed in the same region and further operation was considered hopeless Injections of the mixed toxins of erysipelas were begun , a distinct chill followed every injection, accompanied by a rise of temperature Dr Barber states "I soon had the gratification of seeing the tumor diminish in size and gradually disappear altogether" The patient regained his normal health and strength and has been working ever since He was well and free from recurrence in June, 1897, or three years after treatment Unfortunately, the portion of the tumor sent to the microscopist for examination was lost, yet the clinical history of the case, the very rapid development of the tumor and the rapid recurrence, make it almost impossible to doubt the correctness of the diagnosis of sarcoma

Case 13 —Osteosarcoma of the fibula successfully treated with the toxins The following is a brief abstract of a case just reported at the meeting of the North Carolina Medical Society, May, 1898, by Dr J C Walton of Reidsville, N C

The patient, adult, female, was first seen in 1895, with a tumor enlargement in the region of the calf of the right leg There was considerable pain and discomfort The pain was first noticed in March, 1894, and the lump appeared in June, 1894 The swelling gradually increased in size and the tumor became more painful, until in the spring of 1895 she was unable to bear her weight upon the leg Examination showed the calf of the leg to be the site of a large, hard, smooth, globular tumor, with distended veins over the entire surface The leg measured over two inches more than the other There was no involvement of the joint The patient's general condition had been good up to a short time previous to the development of the tumor As the growth increased in size, her general health failed, on account of the pain, loss of sleep and anorexia A well known Virginia surgeon had pronounced the disease sarcoma, and had advised amputation of the lower third of the thigh Inasmuch as the patient absolutely declined operation, the injections of the mixed toxins were begun by Dr Walton on May 18, 1895, the injections being made deeply into the tumor The initial dose was one drop, which was gradually increased to four, but the patient was never able to bear more than this The temperature reaction varied between 102 and 103 degrees, accompanied by the usual symptoms The injections were kept up until August 1, or two and one half months The tumor had gradually become circumscribed, and in July had begun to soften and break down On December 13 an incision was made and the broken down mass removed with a curette The tumor was very vascular and the hemorrhage profuse In December and January a second and third curetting was made and a large quantity of marrow like, gelatinous substance, together with a portion of the shaft of the fibula, was removed A severe hemorrhage followed a week after this operation From this time on the patient's health rapidly improved, the cavity began to fill with healthy granulations and in a short time she was discharged cured This was in January, 1896 Dr Walton states that the patient is at present May, 1898, in good health, able to walk without a cane, suffers no inconvenience except a little from the loss of bone, and presents a normal appearance

In the discussion upon this case Dr Robinson, who had seen the patient, stated that there could be no doubt in the mind of anyone who had seen the case, that it was sarcoma No pus had been found during the entire course of the treatment, and this together with the fact that the joint was not involved, would seem to indicate beyond a doubt that the disease was sarcoma and not of tuberculous character

Case 14 —Mr C Mansell Moullin surgeon to the London Hospital, in a most complete paper read before the Harveian Society of London on Feb 3 1898 [1] reviews the whole subject of the treatment of malignant tumors with the toxins The paper shows a thorough familiarity with the literature of the subject and his conclusions have the additional weight of being based upon an extended personal experience with this method of treatment The toxins employed were in part prepared by the British Institute of Preventive Medicine and in part obtained from Dr Buxton of the Loomis Laboratory of New York, and similar to those employed by myself They were used in ten cases, with three successes and two deaths In one of the fatal cases, Mr Moullin states that the case was undoubtedly not a suitable one The patient was a man over seventy years of age, with an enormous and very vascular sarcoma of the femur His condition was very feeble, and during the month that elapsed before the fluid could be obtained his condition became much worse The first injection was without result The second, two days later, caused a rigor which was followed by such prostration that the patient never rallied The tumor was a very vascular one, pulsating freely, and the injection on the second occasion in all probability entered directly into a vein In the second fatal case the patient died from acute pyemia under conditions curiously like those of a case recorded by Mr Marmaduke Sheild.[2] In both cases the fluid was carefully tested by a thoroughly competent observer and proved to be absolutely sterile In both instances another patient who was being injected from the same bottle, at the same time and even on the same day, experienced nothing more than the ordinary reaction The explanation of death in these cases offered by Mr Moullin is undoubtedly the correct one In both cases the ulcerating parts of the tumor were full of pyogenic micro organisms, probably staphylococci It is well known that micro organisms that are comparatively harmless, either from the conditions under which they have been living or from the smallness of their number, may become intensely dangerous if they are associated with or aided by the presence of other organisms or the injection of other toxins The staphylococci were there, inert or almost inert. The injections of the toxins, either by increasing their virulence or by diminishing the resistance of the tissues, or by both, were responsible for the pyemia that followed Of the eight remaining cases one was a carcinoma of the breast which showed no change Another was a lymphosarcoma of the groin in a young man who, after two injections, declined further treatment. A third was a similar growth in the neck of a man 65 years of age, which showed no effect from considerable doses of the toxins Two improved slightly, and in three the tumors disappeared The following is a brief abstract of these five cases

Case 14 —(Moullin) A man, 28 years of age, was admitted to the London Hospital in November, 1895, with a tumor in the groin, which had been noticed for four weeks The right iliac fossa was occupied by a firm swelling, fixed not fluctuating, rather tender on pressure, extending to within an inch of the median line and deeply on the inner surface of the pubes The injections were begun in December, the initial dose being one half minim, which was steadily increased to eight minims Rigors occurred on several occasions At first the tumor increased in size and the skin over it became red and tender, by the middle of January a diminution in size was plainly noticeable Then it increased again concurrent with several rigors After that there was a decrease in size until in March it had almost entirely disappeared The treatment had been discontinued by the end of February, 1896 The patient's weight increased from 138 pounds to 145 pounds, and he was well two years later

Case 15 —(Moullin) A man, 55 years old, admitted in November, 1896 Examination showed a large, irregular swelling of firm consistence not connected with the skin or abdominal muscles occupying the left flank The tumor had first been noticed four weeks before The injections were commenced in December, beginning with one half minim and kept up until the end of January, 1897, causing several rigors The growth continued to increase At one time it appeared to be acutely inflamed After that it slowly diminished in size until it could scarcely be felt. The patient was discharged in March, in a much better condition than when he entered, his general health being perfect This case remained well up to the date of the paper, Feb 3, 1898

Case 16 —(Moullin) A man, 38 years of age, was admitted in October, 1895, with tumor of the hip He had been sick for four months The upper end of the thigh was occupied by an irregular swelling that filled up the space between the iliac spine and the trochanter, and moved with the limb The iliac glands were enlarged The limb itself was inverted, adducted and apparently shortened Injections were commenced in October, the doses being increased rapidly up to nine minims, which produced rigor After that several such doses were borne without effect until a third attack of rigor followed on injection of but five minims The patient complaining of weakness the treatment was discontinued The swelling of the hip decreased gradually The glands disappeared The movements of the hip became more free, and inversion and adduction were hardly noticeable A year after his discharge there was no recurrence

Case 17 —(Moullin) A woman, 29 years old, was admitted on the 7th of October, 1896, suffering from a tumor of the right temple Six years prior to her admission a swelling had appeared over the root of the right upper canine tooth This had gradually increased in size In December, 1894, the right superior maxilla had been removed at the London Homeopathic Hospital Microscopic examination had proved the growth to be a mixed round and small spindle celled sarcoma Three months before admission the patient had noticed a swelling in the right temporal region This had slowly increased in size and caused her much suffering from shooting pains The swelling was of very firm and uniform consistence and non fluctuating Injections with toxins obtained from the British Institute of Preventive Medicine were begun October 9 They were given into the arm in doses increasing from one half minim to twelve minims, and continued almost daily There was occasional slight reaction but no rigor or headache, and the growth steadily increased in size. On November 7, three minims of a fluid sent over by Dr. Coley were injected into the tumor, causing a rise of temperature to 101 degrees, cold feet and vomiting. The next day a dose of five minims was injected, being followed by distinct rigor, headache, vomiting and pain in the back. The injections were continued daily and gradually increased to eight minims, each treatment being followed by a rigor. On November 15 the tumor had definitely altered its shape. The next day, the patient objecting to further injections into the tumor, nine minims were injected into the arm without effect. The following day, the patient, having given up hope of improvement from the treatment, left the hospital. Mr. Gordon Brown reports that after the patient left the hospital the growth increased in size involving the malar bone, causing considerable swelling in the zygomatic fossa and leading to exophthalmos. There was intense pain in the head. The eyeball protruded and sloughed away. In November the tumor had become much smaller, but there was an apparent recurrence in the left tibia. In December 1897, Moullin found that the sarcoma at the outer angle of the orbit had disappeared entirely. There was a deep hollow in the temporal fossa. The eyeball was gone and the orbit empty. The left leg was much swollen and there was apparently a tumor in the upper part of the tibia.

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[1] The Lancet (London) Feb [illegible] 1898

[2] Brit Med. Jour January [illegible]

Case 18.—Inoperable sarcoma of the breast successfully treated with the toxins.[1] I am indebted to Dr. J. A. Jackson of Sun Prairie, Wis., for the report of the following case. Female aged 36 years, with sarcoma of the breast of seven years' duration. The patient was seen in consultation by Dr. C. Fenger of Chicago, in September, 1896, and the growth at that time was pronounced inoperable. The cervical and axillary glands were enlarged, and the disease was also thought to have involved the femur. Dr. Fenger counseled against operation, and advised the mixed toxins of erysipelas and bacillus prodigiosus. The treatment was begun on the 25th of September 1896, and continued until October 2, the highest reaction being 100.5 per cent. The tumor softened and discharged slightly. On the 30th of September she had nausea and vomiting. The vomiting continued almost constantly until October 9th. The vomiting was only controlled by hypodermic injections of morphin. From this time on the tumor shriveled up, the glands grew smaller, the ulcer healed and the appetite improved. On February 8, 1897, four months later, she had a well marked attack of erysipelas of the face. After a few days it subsided, and the ulcerated surface cicatrized, leaving a smooth scar and the glands normal in both cervical and axillary regions. A metastatic tumor developed in the rectum about six months later which finally caused death.

Case 19.—Case of Dr. D. B. Hardenberg, Middletown, N. Y. (Unreported.) The patient, male, 48 years old, merchant. Family and previous personal history good. The patient first consulted Dr. Hardenberg April 21, 1897, giving the following history. Several months he had suffered from almost constant pain located in the left hypochondriac region. On April 10th the pain and disability had so far increased as to confine him to bed. Physical examination, April 21, showed a hard swelling in the left iliac region, firmly adherent to the left ilium and abdominal wall. The tumor extended one inch above the crest of the ilium, was sharply defined on its upper border, and extended nearly to the median line. Examination by the rectum, negative. The patient complained of constant pain, and in the evenings the temperature generally ranged between 101 and 101.5 degrees. In view of the duration of the tumor (3 to 4 months) and its close relation to the ilium, probable diagnosis of sarcoma with septic degeneration was made. May 1st, the temperature continued slightly increased, reaching 102.5 degrees, redness and signs of breaking down becoming apparent. The patient was etherized and a free incision made one and one-half inches above and parallel to Poupart's ligament. About two ounces of purulent fluid were evacuated, and a large sized rubber drainage tube inserted. The discharge was very moderate. The mass decreased in size, but the pain continued unabated. During the next four weeks persistent efforts were made by means of poulticing and the administration of alteratives to promote the breaking down of the tumor. At the end of this time the tumor had increased in size and was so firmly adherent to the ilium that it seemed to form part of it, the upper border was very sharply defined, the measurements of the tumor at this time showed that it extended three and one half inches from the anterior superior spine toward the umbilicus, four inches toward the pubis. The case being regarded as hopeless, the mixed toxins were begun May 28, 1897, the initial dose being one half minim. No reaction followed. The second dose of 1 minim produced a marked chill and a temperature of 104 degrees. After the third injection a marked decrease in size was noted, the dimensions having become reduced by 1 inch. The toxins were continued in gradually increasing doses until June 18th. The tumor rapidly and progressively diminished in size until it finally disappeared. Two weeks later the patient had apparently recovered his usual health and was able to walk without difficulty, having been confined to his bed for three months.

In a letter from Dr. Hardenberg, dated June 1, 1898, he states: "The patient is now in excellent health, with no signs of recurrence." As regards the diagnosis, Dr. H. writes: "I regret that I did not remove a portion of the tumor at the time of the operation for microscopical examination, but I had not sufficient hope of a successful issue to be induced to do so. The clinical history, situation and general characteristics of the tumor are, I believe, good evidence of its nature. At all events, the toxins caused rapid disappearance of a trouble that neither time nor ordinary treatment made any impression upon."

This case bears a striking resemblance to the successful cases recently reported by Moullin; in fact, there is less reason to doubt the diagnosis of this case than there was in those of Moullin.

Case 20.—Inoperable recurrent sarcoma of the ovary; marked improvement under the mixed toxins; rapid necrosis of entire tumor; death from septic absorption (unreported). Case of Dr. M. L. Harris, Chicago, Ill. The patient, American female, aged 31 years, unmarried. Family history good. In June, 1897, she first noticed discomfort and slight pain in the lower front of abdomen. Four weeks later the family physician discovered a tumor in the lower part of the abdomen; it grew very rapidly and caused disturbance of the bowel. Examination, Sept. 18, 1897, showed the following: General condition of the patient fair, heart and lungs entirely normal, abdominal tumor arising from the pelvis, extending midway from symphysis pubis to umbilicus lying somewhat more to the right side, movable, but not freely so. The uterus was crowded anteriorly and slightly to the left side, moving with the tumor, which was solid. Operation, Sept. 22, 1897, median celiotomy. Large solid tumor originating from the right ovary, adherent to uterus, rectum and pelvic wall, was found. Uterus and appendages removed with the tumor. Gauze packing was necessary to arrest hemorrhage. Microscopic examination of the tumor showed it to be a large, round celled sarcoma. The patient recovered well from the operation. October 11, difficulty in moving bowels. Examination per rectum showed a recurrent mass in the posterior part of the pelvis pressing upon and involving the anterior wall of the rectum. October 13, tympanites became marked; no bowel movement was attainable. October 14, tympanites intense. Rectum high up seemed virtually occluded by the pressure of the rapidly growing, recurrent mass. Colotomy was considered with a view of giving temporary relief, yet it seemed dangerous from the extreme distention. No gas passed per rectum. It was finally decided to try the mixed toxins. October 14, at 4:30 p.m., 1 minim was injected into the arm; no apparent reaction. October 15, at 6:30 p.m., she expelled gas with some fecal matter. At 10:30, 2.5 minims of the mixed toxins were injected into the arm. No reaction. October 15, 4 p.m., 5 minims of the mixed toxins were given; temperature arose 1.5 degrees; bowels moved and considerable gas was expelled. The patient rested comfortably. October 16, at 11 p.m., another 10 minims; 1.6 degree rise, reaction, temperature 100. Bowels moved several times; gas freely expelled. Tympanites had practically disappeared. (Dr. Harris adds: "I could only attribute the lessening obstruction of the bowel and the disappearance of the tympanites to the effect of the toxins, causing the shrinking of the tumor.") October 18, lower angle of abdominal wound reopened so that the tumor could be seen. It was found to be the size of an average cocoanut. The toxins were thereafter given daily in doses up to 40 minims, the injections always being made subcutaneously in the arm. Very little reactions followed the injections. October 31, pulse was 86; temperature 98; bowels moved freely, almost naturally. November 6, it was noticed that the tumor had become black and was evidently sloughing, fecal matter coming through the wound. November 8, the tumor remained black and sloughing, and there was a bloody watery discharge. The patient now began to show symptoms of septic absorption from the immense sloughing, which involved the entire mass and opened into the rectum. The patient grew weaker, dying November 15.

Dr. Harris states that all injections of the toxins were made in parts remote from the tumor, in the arms and sides of the body; no injection was made into the tumor itself. Only once did anything like a reaction follow the injections On October 26, after an injection of 24 minims, there was a chill with a temperature of 103 degrees, pulse 150 A few days before the tumor began to slough the patient was sitting up in bed daily, eating fairly well and having good bowel movements This unpublished case is reported at some length for the reason that it has an important bearing upon the question of the systemic action of the toxins inasmuch as no injections were made into the tumor, it furnishes complete proof that the action of the toxins is systemic as well as local It further shows the danger connected with the rapid breaking down of a large intra abdominal sarcoma Whether the result would have been different had the injections been given in smaller doses it is hard to say, it is possible that if the degenerative process had been slower the products might have been disposed of either by absorption or by external discharge, as happened in the preceding case of Dr Mynter

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[1] This case was briefly reported at the meeting of the Central Wisconsin Medical Society, March, 1897, by Dr. L. B. Lewis.

Case 21 —Recurrent spindle celled sarcoma, intra abdominal The following case was treated by Dr Frank H Zabriskie of Greenfield, Mass, who has kindly permitted me to report it. The patient was a woman aged 43, with good family and personal history In the latter part of 1895 she noticed a hard swelling in the lower part of the abdomen, this had steadily increased in size In July, 1896, with the assistance of Dr Zabriskie, I removed a large tumor, the size of a child's head, situated behind and to the right side of the uterus and apparently starting behind the peritoneum Careful microscopic examination was made by the pathologist of the Greenfield Hospital, who pronounced the growth a spindle-celled sarcoma A specimen was examined independently by Dr B H Buxton, Pathologist to the New York Cancer Hospital, and the diagnosis was confirmed About four months after the operation a recurrent tumor of considerable size was found at the site of the primary tumor This grew rapidly, and in November, 1896, the mixed toxins were begun by Dr Zabriskie and continued three times a week for about three months The tumor decreased markedly in size In July, 1897, I examined her and found a hard tumor in the region of the left broad ligament, about the size of a goose egg I advised another attempt to remove it by operation, but the patient would not consent. The toxins were continued by Dr Zabriskie two or three times a week in moderate doses (not enough to produce a chill) and with occasional intervals of rest In June, 1898, I again examined the patient and could find only the merest trace of the tumor which was present the year before Her general health was perfect.

Case 22 —Multiple fibrosarcoma, successfully treated by very small doses of the toxins injected subcutaneously remote from the tumor W H *Battle* (London *Lancet*, April 9, 1898, p 998) presented before the Medical Society of London, on April 4, 1898, the following case

The patient, male, aged 30 years, was admitted to St Thomas Hospital, London, Dec 21, 1897, service of Mr McKellar The patient was a well developed, muscular man, with a history of having had syphilis six months before, three or four months prior to admission into the hospital a lump had appeared in the right arm The tumor was painful Later several other swellings developed in the arm and axilla Still later a tumor appeared in the subclavicular region beneath the pectoral muscle The movements of the arm became limited and the arm itself gradually became swollen Two weeks before admission a swelling was noticed about the right clavicle and another just to the right of the sternum, the right arm was swollen and edematous, superficial veins were dilated and tortuous The tumor above the clavicle was the size of a hen s egg, while below the clavicle there was an elastic tumor of considerable size, underlying the pectoralis major and pressing this muscle forward The tumor was of irregular shape, fixed to the deeper parts, but did not involve the pectoralis In the axilla were two glandular tumors, the size of tangerine oranges, with numerous others of smaller size The patient's general condition was good Iodid of potash was given for a time, without any improvement resulting Portions were removed from the sternal and subclavicular tumors and examined by Dr Jenner and Mr Shattock, who pronounced the growth to be a fibrosarcoma with giant cells Small doses of the mixed toxins of erysipelas and bacillus prodigiosus (one half minim) were given every other day, injections being made, not into the tumors, but subcutaneously into the arm The treatment was continued from January 21 to March 21, two months Iodid of potash was discontinued on March 6 From March 21 to April 4 (the day the patient was exhibited) 1 minim of the toxins was administered every other day Patient was much improved in general health, and examination showed only two small swellings remaining one at the site of the sternal tumor, which was reduced to one third its original size, and the other under the clavicle had become only a flat, limited hardness in the costa coracoid membrane above the pectoralis minor 1½ x 1¼ inches in area The other tumors had disappeared

This case is one of the most remarkable yet reported, for two reasons first, it furnishes additional proof of the view maintained by myself, that the action of the toxins is systemic as well as local, second, it shows that most remarkable results can be obtained by means of very small doses without any of the dangers and discomforts that accompany the severe reactions

Summary of results in cases of other men employing same method —Of 35 cases in which the sarcoma entirely or nearly disappeared 10 were round celled, 10 were spindle celled, 5 were based on clinical diagnosis alone, 5 were based on clinical diagnosis and history of recurrence after operation, 4 microscopic examinations made, but type of sarcoma not given, 1 endothelial sarcoma

Of these 35 cases 26 disappeared completely, 2 others decreased so much that only an insignificant node was left and this was easily excised (one of these cases was well three years, the other was well one year when last reported)

Final results —Of 10 cases of spindle celled sarcoma in which the diagnosis was confirmed by microscopic examination, 6 were well two to four and three fourths years after treatment, (3 of them over three years) Of the round celled 2 were well one to three years, the case of endothelial sarcoma two years, of the 5 cases in which the clinical diagnosis of sarcoma was supported by a history of recurrence, 2 cases are well three years, 1 case was well two years Of the cases that rest on clinical diagnosis alone, 3 are well two years, 2 are well one year Of the total 35 cases 14 cases were well over two years, and 6 cases well over three years In 2 of the 35 cases death occurred during the third and fourth week of treatment, after the tumors, —both round celled sarcoma—had been entirely destroyed In 1 case (Shields') death was due to pyemia of staphylococcus origin, the infection occurring at site where tumor had sloughed away In the other case death resulted from septic absorption from too rapid necrosis of very large round celled sarcoma in the pelvis—here also outside infection undoubtedly occurring In one case recurrent sarcoma of neck and tonsil The patient developed erysipelas of scalp, six months after beginning of treatment, when apparently cured of the sarcoma The treatment with the toxins possibly rendered the patient peculiarly liable to accidental infection

Recurrence after having once disappeared under the treatment —In seven cases recurrence took place after the tumor had disappeared In six cases this occurred within a year, in one case at the end of two years, Three of these cases were round celled, one mixed celled, one sarcoma of neck, (type of cell not given) and two sarcoma clinical diagnosis In four of these cases the recurrence was *local* and in three *metastatic*, one in lungs, one in rectum, (primary sarcoma of breast in both cases) and the third (Moullin's case) regarded as a probable recurrence in tibia, the primary tumor having been in superior maxilla A careful study of the case however gives one reason to believe that this swelling in the tibia was not a recurrence but rather an inflammatory tumor indirectly following the use of the toxins Such swellings I have observed a number of times especially when using the living cultures, and in Moullin's case the tumor of the superior maxilla and orbit having sloughed out, infection could easily have occurred

ANALYSIS OF PERSONAL CASES AND SUMMARY OF RESULTS

Total number of cases treated, 140 Of these 84 were round celled, 21 were spindle celled, 9 were melanotic sarcoma, 2 chondrosarcoma, 12 sarcoma (diagnosis confirmed by microscope, but type of case not given), 6 sarcoma (clinical diagnosis of inoperable sarcoma)

Round celled —Of these 40, or slightly less than half, showed more or less improvement, as evidenced by decrease in size and cessation in growth In the great majority of these cases the improvement was only temporary In 2 cases, however, the tumor entirely disappeared, and in a third nearly disappeared All of these cases were well when last observed, one having gone over three years, one a year and a half, and a third one year A fourth became so much reduced in size that it was easily removed The remaining cases of round celled sarcoma showed very little, if any, effect from the treatment

Spindle celled —Of the 21 cases of spindle celled sarcoma, 10 disappeared entirely and all of the remainder showed marked improvement Of the 10 successful cases, one was well 6 years (living cultures used in this case), one for 5 years, one for 4 years, one for 4½ years, one for 1½ years one for 1 year, one for 9 months In 3 cases of spindle celled sarcoma the disease recurred at intervals of 9 months to 1¼ years In all of the cases the disease yielded to further treatment Two are now well, and the third, when last heard from, 9 months ago, was improving

Melanotic sarcoma —No case showed more than slight temporary improvement It should be noted that Dr George R Fowler of Brooklyn has had one case of melanotic sarcoma of tonsil and fauces entirely disappear under the mixed toxins, but there was a recurrence two years later which proved fatal [2]

Mixed celled sarcomas —Of these, one entirely disappeared and the patient remained well for $3\frac{1}{4}$ years, when a recurrence took place in retroperitoneal region which proved fatal in a few months, one became smaller, was removed and the patient is now well over one year, two other cases were improved and two unimproved

Chondrosarcoma —In one case—very large inoperable sarcoma of ilium—the tumor disappeared entirely and the patient was well for seven months Local recurrence then took place, proving fatal

Osteosarcoma, inoperable —Clinical diagnosis of only one case, osteosarcoma of sacrum Tumor entirely disappeared and patient well nearly three years later One of ilium, tumor disappeared and patient well $1\frac{1}{2}$ years

One epithelioma of chin and floor of mouth, is well 4 years, one recurrent, inoperable fibro angioma is well 2 years

SUMMARY OF FINAL RESULTS

In 24 cases, partial or complete disappearance of tumors was observed, in 16 cases this was complete Of these 8 cases were well 3 to 6 years, 9 were well $1\frac{1}{2}$ to 3 years, 4 are well at present, 9 months to $1\frac{1}{2}$ years, 3 died of recurrence, which took place from 7 months to $3\frac{1}{2}$ years after treatment

The action of the toxins upon the different types of sarcoma —It is evident from a study of the cases reported that the influence of the toxins varies greatly, according to the type of the sarcoma, being most marked in the spindle-celled, and least in the melanotic variety It is a significant fact, and one of great importance from a pathologic standpoint, that more than one half of the cases of inoperable *spindle-celled sarcoma* treated with the toxins have disappeared entirely, and every case showed a marked improvement Of the cases of round celled sarcoma about one half showed more or less improvement, the other half failing to show any effect from the treatment In many cases the improvement was but slight and temporary in character, the tumors at first showed decrease in size, a little later they remained stationary and then after a longer or shorter interval again increased in spite of the treatment A considerable number of round-celled sarcoma have disappeared entirely and there is reason to hope for a permanent cure

The melanotic variety, as I have said, is the least influenced of all I have treated ten cases of melanotic sarcoma, and in no case was there more than a slight, temporary improvement It is true that most of the cases were multiple and very far advanced at the time the treatment was undertaken, yet, in one case the injections were begun immediatedly after primary operation, as a prophylactic measure, but this did not prevent speedy recurrence Were it not for the fact that there is a case of advanced melanotic sarcoma on record which was cured by accidental erysipelas I should look upon this variety as entirely hopeless The varying action of the toxins upon these different types of sarcoma lends support to the opinion expressed by Bland-Sutton in his book on "Tumors, Innocent and Malignant," which is as follows "The opinion that all varieties of cancers are due to one cause, assuming cancer to be the product of such agents as produce tubercle, glanders and actinomycosis, it is much more probable that under the term cancer, many tumors are grouped together on account of structural likeness, they have a widely different cause, and the same view holds good for sarcomata and epitheliomata "

Again, writing in 1892, the same writer states "Sarcoma[1] is probably the scene of action of a violent and prolonged contest between irritant micro organisms and leucocytes I say probably, because, as has been already remarked, pathologists have not yet succeeded in isolating a specific bacteria for sarcomata in general That such agents will soon be discovered is in the highest degree probable, because in recent years the list of infective granulomata is made at the expense of sarcomata The structure, mode of growth, infective properties and manner in which these tumors destroy life, clearly coincide with what is positively known in regard to infective granulomata "

I will here repeat the opinion which I have expressed in an earlier paper, first in 1892, that I believe this curative action of the streptococcus of erysipelas and its toxins can only be explained on the ground that sarcoma is of micro-parasitic or infectious origin Furthermore, I believe this action in itself furnishes very strong evidence in support of this theory It is a well-known fact that the streptococcus of erysipelas exerts a powerful influence upon tubercular and syphilitic lesions, both due to a specific micro-organism, and as far as we know it has no effect upon any form of tumor not of infectious origin unless we exclude sarcoma and carcinoma Several links in the chain of evidence have been added during the past two years through the experiments of Juergens of Berlin, and more notably by the more recent researches of Roncali and Sanfelice of Italy. These experiments have been so convincing that so conservative and careful an observer as Dr Roswell Park in his recent paper on the "Etiology of Cancer,"[2] read before the American Surgical Association, states. "Without going so far as to say that this can be done in every instance and that all cancers are necessarily of parasitic origin, one is justified by these results in at least maintaining that some cancers are positively of such origin If upon this experimental ground one should infer that all cancers are parasitic manifestations he would do, as will be seen, little violence to the laws of evolution "

Space will not permit me to describe a number of other cases in which the injections of the toxins were followed by marked improvement, but I have given a detailed report of eight cases of sarcoma treated since the meeting of this Association in May, 1895, which totally disappeared under the injections All save two were inoperable, and these two were both rapidly recurrent, amputation of the right arm being the only operation that could be offered in one, and extensive removal of the lip in the other The diagnosis in seven of these cases was confirmed by microscopic examination, and in the eighth case the clinical diagnosis was beyond reasonable doubt If a tumor of four months' growth, starting from the sacrum, can cause a loss of thirty-five pounds in weight, produce marked cachexia, severe lameness in both legs and agonizing pain, and yet be non-malignant, we have certainly discovered some new variety of benign tumor Moreover, a substance which, injected subcutaneously, in regions remote from the tumor, causes almost immediate cessation of this pain, rapid return of appetite, an increase in weight of twenty eight pounds in the short space of six weeks, with no other treatment, all this with the gradual decrease in size, and final disappearance of the tumor itself, while the patient continues in perfect health three years after the treatment, such a substance must possess qualities sufficiently interesting and important to command our most serious consideration Turning to the other seven cases in which the diagnosis was confirmed by microscopic examination, and in which the tumor entirely disappeared under the same treatment, have we not sufficient evidence to convince the most exacting critic that these toxins do have specific action upon sarcoma, which in a considerable number of cases, proves curative? In addition to my own, I have tabulated thirty-two cases of sarcoma treated by other surgeons, here and in Europe, with the same preparation of mixed toxins with complete or partial success The successful cases have become so numerous and so well authenticated that the favorite explanation of the critics, "mistaken diagnosis," must now be abandoned No one can seriously offer such an explanation and still retain a reputation for sound judgment and fair-mindedness

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[2] Amer Jour Med Sciences August, 1898, p 175

[1] J Bland-Sutton Evolution and Disease " London, 1892.

[2] American J[illegible] of Medi[illegible]nces May 1898.

I have been more than surprised to find surgeons for whose ability and judgment I have the highest regard, find it almost impossible to believe in the efficiency of the toxins of erysipelas, although they fully admit the beneficial and curative properties of accidental erysipelas in malignant tumors The more we study the life history of pathogenic germs the more certain do we become that their influence upon man or animals is chiefly the result of the toxins they produce, therefore, admitting, as we must, the living streptococcus of erysipelas to have a curative action on malignant tumors, theoretically, we have the strongest reason for believing this action to be due to the toxins The result of practical experience is, as we have seen, in strict accord with theory

In view of the evidence already presented, is it not more rational to explain the disappearance of these tumors as a result of the specific action of the toxins upon sarcoma, than upon the theory of spontaneous disappearance or of mistaken diagnosis? In regard to these explanations so frequently offered, I would briefly say that after a most careful search of the literature of sarcoma, I have yet to find a single case of spontaneous disappearance in which the diagnosis had been confirmed by microscopic examination In support of this view I again quote Mr Bland-Sutton, who, in the discussion of Grieg Smith's well-known paper upon "so-called disappearance of abdominal tumors,"[3] stated that he did not believe in the spontaneous disappearance of any connective tissue or cancerous growth, and the spontaneous disappearance of myomata which had been reported was based on clinical observation alone

In the discussion of my last paper before the Johns Hopkins Medical Society, April 6, 1896[4] Prof William Welch said "I see no way of gainsaying the evidence which Dr Coley has brought forward, that there is something specifically and genuinely curative in this method of treatment A single undoubted cure of a demonstrated cancer or sarcoma by this treatment would be enough to say definitely that the treatment exerts some specifically curative influence, for the spontaneous disappearance of undoubtedly malignant growths of this character is almost unknown Dr Coley has however, presented us positive proof not only of one, but of numerous cases of malignant tumor cured by his method"

As I have already stated in a previous paper, it would be somewhat remarkable that these cases should be the first and, thus far, the only ones with both clinical and microscopic diagnosis of malignancy, to disappear spontaneously, and it would be more remarkable still that this disappearance should be coincident with the beginning of the treatment with the toxins Furthermore, it would be clearly unfair to rule out these cases on the ground of errors in diagnosis without ruling out the cases of cures following operations for sarcoma Both have been subjected to the same standard of diagnosis, with this important difference, that the cases treated with the toxins have been subjected to *far more severe tests*, inasmuch as in most cases the clinical and microscopic diagnosis were confirmed by a number of the best surgeons and pathologists

I admit, there is difficulty in always being able to differentiate between a tubercular or syphilitic tumor and sarcoma, but this applies only to round-celled sarcoma and not at all to the spindle-celled variety which, as Dr Welch has pointed out, must be classed as a genuinely malignant tumor If the successful cases were confined entirely to the round celled variety of sarcoma, there might be some little weight to the argument, but inasmuch as the majority of the successful cases have been spindle celled sarcoma, a type of tumor in which error of diagnosis is practically impossible, the tubercular or specific theory falls to the ground

I may possibly be asked to explain the unfavorable report upon the value of the toxins of the Committee of the New York Surgical Society in April, 1896, which has been widely quoted, and which, coming from such a distinguished source, could not fail to raise doubt even in the minds of those hitherto disposed to give the method a fair and unprejudiced trial Up to the present moment, I have made no attempt to answer this report, save by the presentation before the Society of additional cases successfully treated by the toxins Since this report was submitted, I have exhibited before this Society four cases of inoperable sarcoma—the diagnosis of which had been confirmed in every instance by the highest authorities in pathology—successfully treated by the method in question The tumors had entirely disappeared, and one of these cases, a spindle celled sarcoma of the chest wall and axilla, is now free from recurrence nearly three years, the diagnosis in this case having been confirmed by Prof Wm Welch of Johns Hopkins University I have acted on the principle laid down by Oliver Wendell Holmes more than half a century ago "It is by notes of cases rather than by notes of admiration that we must be guided when we study the revised statutes of nature" And it is by virtue of these by notes of cases that I appeal from the verdict of the Committee of the Surgical Society

The simple truth is what I have been seeking, and all honest criticism, so far as it tends to aid in arriving at truth, is most welcome It is Huxley who says to the young investigator, "Veritas praevalebit some day, and even if she does not prevail in his time, he himself will be all the better and wiser for having tried to help her, and let him recollect that such great reward is full payment for all his labor and his pains"

CONCLUSIONS

A careful study of my own cases, as well as those thus far treated by other men, justifies, I believe, the following conclusions, which, I may add, are in almost perfect accord with those recently expressed by M Moullin

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[3] Brit Med Jour Dec 10 1898

[4] Johns Hopkins Bulletin September 1896

1 A considerable number of cases of inoperable sarcomata, the correctness of the diagnosis of which is beyond question, have entirely disappeared under this method of treatment

2 A large proportion of these cases have remained free from recurrence more than three years after treatment, the period which has generally been accepted as of sufficient length to justify their being regarded as permanent cures

3 The different varieties of sarcoma differ widely as regards the manner in which they are acted upon by the toxins The results thus far show that the treatment is far more successful in the spindle-celled variety, more than half of the cases of spindle-celled sarcoma in which the injections were made having disappeared Round celled sarcomata yield far less readily, although a number have been successfully treated No case of melanotic sarcoma has up to the present time shown more than slight temporary improvement

4 The action of the toxins upon sarcomata must be regarded as a very rapidly progressing coagulation necrosis with fatty degeneration This action is not the result of inflammation, nor does it resemble the destructive action of a local escharotic like carbolic acid, but it is rather specific in character, exerting a direct influence upon the tumor cells

5 The specific action is further confirmed by the fact that several cases have entirely disappeared when the injections were made subcutaneously, remote from the tumor

6 This method of treatment is attended with a certain amount of risk unless certain precautions be taken The chief dangers to be guarded against are *a*, collapse from too large doses of the toxins, *b*, pyemia from insufficient care as regards asepsis, especially in cases where there is a granulating or sloughing surface To prove that the risks are small I may add that in more than two hundred cases treated personally, death was caused by the injections in but two, and one of these cases was so nearly moribund that no treatment should have been begun

7 The use of the toxins after primary operation as a prophylactic against subsequent recurrence has much to recommend it If used in such cases, mild doses should be sufficient, and if proper precaution is observed the treatment should be free from risk

[I wish to take this opportunity of publicly acknowledging my great indebtedness to Dr B H Buxton of the Loomis Laboratory, without whose skillful labors and untiring zeal these results would have been impossible]

DISCUSSION

Dr McArthur of Chicago—Since Dr Coley first introduced this treatment I have had six cases under careful observation and treatment, and last Christmas day I received a very handsome gift from a man who for two years has been free from any recurrence as a result of this treatment One must bear in mind that the author only recommends his method in cases that are inoperable, and if he saves only twelve cases the attention of the surgical world should be directed to that remedy in the treatment of conditions for which we have no other recourse I remember the case of a patient who twice refused to have an extremity amputated, although the diagnosis showed plainly it was sarcoma, and he subsequently recovered One of my cases was a round celled sarcoma, and the other a spindle-celled sarcoma, and under the treatment by the toxins the growths disappeared, and the patients are living and well at the end of three years I believe this method to be almost useless in cases of melanotic sarcoma, but in spindle celled sarcoma there are very decided reasons for giving it a trial before removing the extremity

Dr Harris—I would like to ask why the author does not recommend toxins in carcinoma I have a case under observation where I have been hesitating for several weeks as to what to do in order to obtain information on the subject, and I would like him to tell us why he considers it unwise to use the remedy in carcinoma

Dr Lewis of Topeka—I am very much pleased with the method, especially as I had such a radical cure in one case, which occurred at the angle of the jaw on the right side in a patient of mine two years ago Seeing that I knew what the result of an operation for such a condition would be, I advised the lady to go to Chicago and have it done there, which she did Paralysis resulted, as I expected, and I later removed some more of the jaw Suppuration went on, and eventually the clavicle became involved, and later the tibia, necessitating removal of sections of these bones Some time afterward she accidentally acquired erysipelas in the face, which healed completely This stimulated me to use Coley's mixture, and the woman is now well

Dr A D Bevan of Chicago—I would like to relate my experience in this connection, as it may throw some light upon the action of the toxins in sarcoma, or in pathologic conditions with which it may be confounded Within the past year a case of a large gumma of the thigh came under my observation, which was diagnosed at that time as sarcoma, and radical operation was recommended The patient was loth to submit himself to such radical treatment, and I began the use of the erysipelas toxin The result was some diminution in the size of the growth, but not to the extent of entire disappearance I later did an exploratory operation, and removed a section of the tissue, which showed on gross appearance evidence of gumma, and histologic examination confirmed this He was put upon iodid of potash, and the growth entirely disappeared He then admitted having had a specific lesion some years before The idea has occurred to me that possibly, in view of the fact, together with the unanimous opinion of continental surgeons, as well as many of our own countrymen, that in pure sarcoma no results have been obtained by the erysipelas toxin, it may be possible that many of these cases were gumma, resembling sarcoma very closely, which could only be proven by continuous specific treatment

Dr Coley, in closing—I have treated nine cases of melanotic sarcoma, but in no case did I get more than a brief improvement Up to the present time the results have not been sufficiently good in carcinoma to warrant me in continuing the use of the toxins The only evidence I have as to the permanency of the cure in these cases is in a case of epithelioma of the mouth The surgeon had recommended entire removal The toxins were employed, and the case remained well for three years As to Dr Bevan's point, round celled sarcoma is the only one that could be confounded with gumma In the opinion of Dr Welch spindle celled sarcoma can not be confounded with anything else As 50 per cent. of the spindle-celled sarcomas have disappeared, which before were hopelessly inoperable, I think the question of mistaken diagnosis is one that can not be entertained

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A SURGICAL TREATMENT FOR HYPERTROPHIED PROSTATE AND HERNIA IN OLD MEN, WITH A REPORT OF TWENTY-EIGHT CASES

Presented to the Section on Surgery and Anatomy at the Forty ninth Annual Meeting of the American Medical Association
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Concluded from page 400

Reginald Harrison, F R C S , reports twelve cases of single vasectomy Seven derived permanent benefit, in the other five, the results were either negative, or it was impossible to trace the patients subsequently The two cases he reports are as follows

Case 1 —Patient, aged 69, his prostate was very large Prominent symptom was extreme frequency of micturition No catheter used Amount of residual urine about an ounce, but for some time the patient urinated about every hour, day and night Operation was performed with successful result. When the patient was examined five months later, the right testis was found to be atrophied and soft, the left somewhat larger than before The right side of the prostate underwent shrinkage and was smaller than the opposite lobe

Case 2 —Patient, aged 72, complained of great frequency of micturition of ten years' duration, eventually amounting to about every two hours, day and night, sometimes oftener Only a small amount of residual urine, and not dependent on the catheter The right vas was divided Six months after the operation micturition was normal in every respect, and although only one vas was divided, considerable shrinkage of the prostate had taken place

Harrison states that in the majority of his cases micturition became much less frequent after the operation But in two of his cases operated upon, no benefit was obtained in this respect, and no change was observed in the opposite testicle indicative of hypertrophic activity, and he was not disposed to repeat the operation on the other side Harrison also reports ten cases of double vasectomy, for five of which he claims great, and believes lasting, benefit Of the remaining five two have derived but very little benefit, two he was able to trace, and one, rather unusual, he reports as follows

Patient about 70 In addition to suprapubic fistula consequent upon lithotomy, he had a very large, hard and fibrous prostate The size of the latter was diminished by dividing the vasa Two months elapsed between the first and second division The result occasioned the abandonment of the catheter previously used constantly Prostate half the size Fistula also reduced to its smallest dimensions Although only one and a half inch of each vas was removed yet the patient retains the necessary desire and power for sexual intercourse (*British Medical Journal*, 1895, Vol, ii, p 993)

Macewen reports three cases in which the prostate was atrophied by bilateral castration

Case 1 —Aged 64 Feeble and frequent micturation for seven years, required to use the catheter frequently for attacks of retention Passed urine every one and a half or two hours with much pain, length of urethra nine and a half inches, prostate much enlarged toward rectum, soft and elastic Residual urine four ounces, urine alkaline and contains a considerable quantity of pus

Double orchidectomy Testicles of normal appearance and spermatozoa present. Wound healed without suppuration In a week patient felt greatly relieved could retain urine three or four hours In a month prostate as felt per rectum sensibly smaller, urinated every four hours, quantity of pus diminished At the end of two months the prostate was less than half its size at the time of operation Patient passing urine three times a day and once or twice by night Urine showed only mucous deposit, length of urethra eight and three quarter inches

Case 2 —Aged 84 Symptoms began with complete retention, when urine had to be drawn off Entirely dependent on catheter, expulsive power of bladder feeble, length of urethra ten and one half inches Prostate as felt per rectum much enlarged, hard and flattened

Double orchidectomy Microscopic examination showed testicles in a state of involution Spermatozoa absent Two weeks later no difficulty with catheter Size of prostate unchanged Two months after operation required catheter once in twenty four hours The remainder of the urine passed voluntarily Length of urethra nine and one half inches urine clearer, deposit mucus and a few pus cells Prostate diminished by one half

Case 3 —Aged 71 Had urinary difficulty for ten years seven of which patient was compelled to depend upon the use of the catheter Difficulty in passing urine with occasional discharge of blood Before the operation he was obliged to use the catheter every two hours Length of urethra ten and three quarter inches By the rectum prostate was found to be very large and somewhat hard

Double orchidectomy Testicles normal, no spermatozoa found Catheter used without difficulty every four or five hours Size of prostate per rectum unchanged Three months after operation use of catheter required every six or seven hours Length of urethra ten and one half inches Per rectum no appreciable change in size of prostate (*Brit Med Journ*, 1896 Vol ii, p 959)

Colclough reports a case of double vasectomy, death, partial necropsy Man aged 70 years, of unusual physique and heavy whisky drinker At the age of 67 prostatic trouble commenced Irritability of the bladder gradually commenced with attacks every three or four months The patient then suffered from an attack of acute cystitis, the prostate was enlarged, but with "catheter life" the patient was comfortable, and not until fourteen months later did urethritis commence The left lobe of the prostate increased considerably, the urethritis became almost constant Examination of the left epididymis showed chronic enlargement Vasectomy was performed Patient survived the operation five weeks Postmortem showed the prostate gland a simple bag of pus, the bladder was anchored down to the posterior wall of the abdomen, the left kidney bound down by adhesions and felt like a bag of fluid The right kidney was hypertrophied The lateral lobes of the prostate oozed with pus, the middle lobe was soft and pendulous The lower two thirds of the bladder was sacculated and thickened, with pus in all the sacculations The right ureter opened normally, while the left was embedded in a mass of new growth Below this mass was a closed-in abscess cavity with smooth walls (London *Lancet*, 1897, Vol ii, p 658)

Cabot reports a case in a strong man of 75, troubled five years with difficulty in urinating He suffered from an attack of acute inflammation of the bladder Catheter was used regularly Castration was performed After the operation patient's mental condition changed decidedly, he became maniacal Injection of testiculine was tried with successful result, after which patient's mental condition was greatly improved The prostate was the size of a hen's egg Third lobe enlarged to the size of a pullet's egg and projected upward and backward into the bladder On its apex there was a calcareous deposit firmly adherent Posterior to this, extending forward in the body of the prostate was a cavity with smooth walls, which contained about a teaspoonful of gravel Bladder wall was thickened and injected, and showed on its surface a few hemorrhagic spots Kidneys were in a state of acute pyelonephritis, and the right was about one third larger than normal (*Annals of Surgery*, 1896, Vol xxiv, p 265)

Morton, F R C S, reports a case of prostatic hypertrophy in which he performed bilateral castration The patient was 70 years old, with prostate moderately enlarged, hard, nodular, and there were twelve ounces of residual urine Owing to the catheter not being kept clean, septic cystitis occurred Both testicles were removed by a small median incision There was no mental disturbance following Very gradual atrophy of the prostate took place A year later, when examined, it was normal in size, but patient still had the same amount of residual urine, although micturition was easier There was a little pus in the urine which flowed through the catheter just before the bladder became empty (*Brit Med Journ*, 1896, Vol ii, p 995)

C Mansell Moullin reports two cases in which castration was performed for enlargement of the prostate

Case 1 —Aged 74 Prostatic disease advanced Perustomed the prostate was of enormous size Patient was acc rectum, to use of catheter for many years The urine, in spite of the bladder being regularly washed out, was foul, ammoniacal and loaded with mucus and phosphates Bladder was so contracted from cystitis of several years' duration that it held only two ounces of urine Patient wore portable urinal during daytime, and in spite of morphia suppositories passed urine fourteen or fifteen times at night Castration was performed Three days later patient was able to dispense with morphia for two nights, slept an hour and a half at a time, the longest spell previously being three quarters of an hour Ten days later, as per rectum, prostate was found much smaller stream of urine larger, urine was neutral in reaction, and small masses of phosphates were beginning to come away One month after operation the prostate diminished so much that a metal catheter with ordinary curve passed without difficulty Size of bladder increased a little, it retained at times four ounces of urine, but micturition was frequent day and night No morphia was required The patient frequently slept two hours without being disturbed

Case 2 —Aged 64 Prostate very large, repeated attacks of cystitis and several attacks of profuse hematuria Catheter was passed every hour, night and day Castration was performed There was no shock, and patient rallied well Wounds healed A small quantity of urine passed naturally, the first time in fifteen months Eight days after the patient had a fainting fit, urine drawn off by catheter, and contained a good deal of blood Two days later dyspnea and hematuria returned, diarrhea set in, the bowels acting eleven times in twenty four hours Death occurred on the eleventh day after operation Two days previously blood stained urine was passed at intervals by the urethra Heart failure was the cause of death (Clinical Society Transactions, Vol xxviii, p 193)

Griffiths reports a case of enlarged prostate in which bilateral or complete castration was performed The patient was 74 years of age and had severe cystitis of long duration Urine contained a large amount of mucus and pus Micturition was frequent and painful Catheter was used for two years Prostate per rectum as large as a medium sized orange Castration was performed Testicles were of full size, and in the left there was a large spermatocele In each testicle there were active spermatozoa in the seminal tubes One week after the operation a few ounces of urine were passed without the aid of a catheter Urine still contained pus, and the patient complained of much pain in the loins At the end of the second week patient suffered from sleeplessness, becoming delirious On the fourteenth day after operation the right popliteal artery became blocked, the limb below showed signs of beginning gangrene Eighteen days after the operation the patient died

Postmortem The right kidney was found enlarged from chronic hydronephrosis suppuration of the distended pelvis, left kidney natural The bladder was thickened, mucous membrane and right ureter much inflamed In the right popliteal artery, a mottled and adherent recent clot The prostate still enlarged, etc (*Brit Med Journ*, 1895, Vol i, p 579)

Fenwick reports nine cases of double castration (White's operation) upon the enlarged prostate He considers White's method for the shrinkage of enlarged senile prostate an important addition to our present methods The reports of cases are as follows

Case 1 —Test case for shrinkage of the normal human prostate after castration Entire genitals of a man, aged 45, ablated by the Thiersch-Gould method for extensive epithelioma of the penis After six months the prostate was reduced to the size of a small bean

Case 2 —Aged 76 Some years of feeble prostatic micturition Sudden and prolonged retention Extreme difficulty of catheterization Prostate unusually hard and enlarged, especially in the left lobe Double castration Three weeks after urine passed voluntarily without the use of catheter Suprapubic wound closed Prostate much diminished

Case 3 —Aged 70 Symptoms of enlarged prostate for six years Attacks of retention Slight cysto prostatitis with mild pyelitis present, inflammatory conditions commencing a year before castration Per rectum, the prostate was small, but the lateral lobes were much upraised toward the bladder, the vas at the vesical orifice being edematous and translucent. Bladder was fasciculated and pouched First week after operation the urine cleared, stream improved in force and the pain on urinating diminished At the end of the third week the prostate was a little smaller, structures of the lobes more fibrous, and the interlobar line had filled up After three months the stream had markedly improved in force, and only slight variability in power of bladder remained

Case 4 —Aged 76 Repeated attacks of retention and uremia Catheterization most difficult. Prostate plump and elastic, only moderately enlarged per rectum Suprapubic drainage for months without improving the cystitis Double castration Cystitis rapidly diminished and voluntary micturition recovered after a fortnight Prostate slightly smaller at the end of the third week

Case 5 —Aged 76 Dysuria for five years, not much relieved by catheter, which was passed almost every hour Irrigation of the bladder had no control over the cystitis Double castration Prostate slowly diminished in size Catheterization only needed every six hours Cystitis diminished

Case 6 —Aged 81 Catheter used for nine years, six or seven times during the night and three times during the day Efforts to pass the instrument were often followed by hemorrhage Prostate per rectum large and elastic, especially the left lobe Castration performed For three days after operation catheter needed twice in twenty four hours, then four times At the end of three weeks the prostate diminished and interlobar line of demarkation had filled in cystitis greatly decreased, but catheter had to be used three times at night.

Case 7 —Aged 60 Dysuria for about three years, with occasional use of catheter, followed by cysto prostatitis Prostatic abscess formed and burst into the urethra Intense pain after every feeble attempt at urination finally retention Catheterization for a week Prostate enlarged laterally and elastic Castration Recovery of voluntary micturition on third day, slight shrinkage of the prostate after two weeks Prostate plump and elastic, diminished one eighth by the fourth week

Case 8 —Aged 46 Aggravated prostatitis with great local pain, tenderness, severe and intractable neuralgic radiations for ten years, also increased frequency of micturition Sitting or walking unbearable Castration Prostate slightly smaller, as yet no marked relief Final condition to be reported later

Case 9 —In progress

The above cases were in urgent need of relief and were selected from a large series of prostatics for the operation It will be noticed that they illustrate the use of the operation in four groups of cases 1, those cases in which castration was performed early, that is, before the vesical muscle had been permanently crippled, but not before it had been impaired, 2, those in which the muscle power had been abrogated by years of catheterization, and in which death was approaching from ascending pyelitis, 3, those in which the ordinary obstructive symptoms were aggravated by chronic inflammatory troubles of the senile prostate, 4, one mid-adult case of incurable chronic prostatitis and vesiculitis which was complicated by unrelievable neuralgic radiations (*Brit Med Journ*, 1895, Vol i, p 378)

Hayden reports a case of hypertrophy of the prostate gland in which double castration was performed Patient aged 70 For five years had frequent urination day and night, use of catheter painful and difficult Straining caused protrusion of several hemorrhoidal masses Urine ammoniacal Bladder holds six ounces of fluid, severe cystitis Prostate twice its normal size Double castration performed Twenty-four hours after operation there was a severe spasm of the compressor urethræ muscle, necessitating use of catheter There was also spasm of the anal sphincter Fifth day after, much improved Catheter passed to the bladder Two months later patient was absolutely free from all pain Prostate per rectum a little enlarged, but non-painful (*Medical Record,* 1895 Vol xlvii, p 612

Lilienthal reports a case of enlarged prostate practically cured by castration Patient, aged 56 For ten years was troubled with frequent micturition, occasional attacks of vesical tenesmus Catheterized for retention His urine was alkaline, and there was severe cystitis The urine contained quantities of pus and bloody mucus Prostate per rectum found to be enlarged three times its normal size Both testicles were removed, signs of slight bilateral epididymitis First improvement noted was that the patient could pass a stream cystitis vanished Four weeks after the use of the catheter was not necessary Per rectum prostate still enlarged, but only half the size it was before, and feels flaccid (*Medical Record*, 1895, Vol xlvii, p 506

Rand reports two cases of hypertrophied prostate relieved by castration,

Case 1 —Aged 58 For ten years patient had more or less difficulty in urinating Five and a half ounces of residual urine were present at first catheterization Both testicles were removed Second day after operation he voided twelve ounces of urine voluntarily at different times during the day Five weeks after, residual urine, off and on, was absent, or in small quantity Prostate per rectum much smaller, and a small sized sound drops into the bladder by its own weight

Case 2 —Aged 69 For nine years patient has had frequent urination Length of urethra eight inches Residual urine six or seven ounces at times Prostate twice its normal size Both testicles removed No shock nor pain followed, The size of prostate decreased rapidly within eleven days after operation (*Annals of Surgery*, 1895, Vol xxii, p 217)

Bryson reports a case of prostatic overgrowth relieved by complete castration Patient, aged 74 At 56 he gave first evidence of prostatitis There was dilatation of bladder from obstructive prostatic overgrowth A cystitis and mild pyelonephritis also developed Dilatation of heart and pulmonary emphysema supervened Demonstrable results followed the operation There was a marked diminution of the enlarged prostate without any change in frequency of urination, without alteration in the amount of tidal urine, and with but slight decrease in the amount of residual urine In short, complete castration caused complete atrophy of prostatic gland without effecting any change in the chronically inflamed and degenerated bladder, and equally without curing or benefiting a chronic pyelonephritis from extension (*Journal of Cutaneous and Urinary Diseases*, 1895, Vol xiii, p 352)

Chetwood reports two cases of prostatic hypertrophy after operation one by vasectomy, the other by castration

Case 1 —Aged 52. Patient had never had treatment for bladder until his first attack of retention of urine, and catheter was passed for the first time Prior to this he had frequent urination night and day About eight months later he was operated on for fissure of the rectum, bladder trouble aggravated after operation, and he was regularly catheterized Third day after, introduction of catheter was difficult, followed by hemorrhage Patient was examined ten days later, and per rectum enlarged prostate was found, it being the size of a hen's egg Third lobe prominent. An incision was made over the external ring, and after separating the vas deferens two ligatures were applied and one quarter inch of the canal between them was resected For ten days a record was kept of the amount of urine passed per catheter and voluntarily At first the amount of urine passed by catheter greatly exceeded that passed voluntarily, but toward the end of the week the amount was reversed, so that at the end of the ten days the patient was able to empty his bladder down to about four ounces The patient became lax in the proper care of himself and his old trouble returned with increased activity Frequency and urgency of urination became aggravating and attacks of retention more frequent than before About one year after operation his condition was worse than the previous year Prostate was the same size and larger Dr Chetwood remarks that he is forced to believe that whatever relief he experienced was due to his introduction into catheter life He says he finds that cases of vasectomy reported by Guion, Cartier, Helferich, Legen Isnardi and others in most of which conclusions reached seemed decidedly negative, while in some instances there seems to be a certain amount of functional improvement with one exception, that there was no decided diminution in the size of the prostate, and it is a question when improvement was noted whether or not it was due to the operation

Case 2 —Patient, aged 81 Difficulty with urinary function for ten years, several attacks of retention which were relieved by catheter For four years catheter passed twice in twenty-four hours Examination showed four to six ounces of residual urine, penile distance nine inches, prostate fibrous and hard, upper distance barely touched with end of index finger, distance being about three and a half inches from below upward, and about three inches laterally Double castration performed Recovery from operation uneventful During the *two weeks following relaxation of regular catheterization* and bladder irrigation there were symptoms of bladder irritability, turbidity of urine and tenesmus Prostate was reduced one third in size and softer in consistency, residual urine was reduced one third, penile distance half an inch shorter Five weeks after, urine flowed freely, and catheter not required Urine, however, quite turbid Two months after operation the bladder was irrigated at regular intervals, urine passed once every two hours by day, catheter used before retiring at night, by which means patient slept without again rising Examination reveals that the prostate was reduced one-half its original size, and penile distance from three fourths to one inch less than length before operation

Regarding the subject of double castration from various cases reported in the journals of Guion of Paris and Casper of Berlin, Dr Chetwood thinks that there is little doubt that removal of the testicle produces a certain amount of shrinkage in the prostate gland, but with a varying amount of subsidence of the functional disturbances He doubts if the operation ever will be popular (*Journal of Cutaneous and Genito-Urinary Diseases*, 1897, Vol xv, p 111)

Howitz reports four cases of stone in the bladder with hypertrophy of the prostate gland, where a positive diagnosis was impracticable until double castration resulted in atrophy of the prostate, rendering the passage of a stone searcher possible

Case 1 —Patient aged 70 years, suffering from symptoms of cystic stone, which were intensified for five years, urine contained blood Per rectum hypertrophied prostate, no stone searcher could be passed Double castration was performed Two weeks after operation a stone searcher was readily passed and the *existence of calculi easily detected* These were removed by a suprapubic cystotomy and patient recovered rapidly

Case 2 —Aged 65 years History of case similar to Case 1 Obstruction produced by enlargement of prostate, permitting passage of small catheter only Double castration was performed Fourteen days after a stone searcher was readily introduced and a large sized calculus found, which was removed by a suprapubic cystotomy Patient also recovered rapidly

Case 3 —Aged 62 years, hypertrophied prostate In addition to the usual symptoms there was great pain in the glans penis, *especially* after urination Patient *frequently* passed blood before and after micturition, two attacks of retention of urine Double castration preliminary to cystotomy Ten days after operation stone searcher readily passed, two good sized calculi were found in a pocket posterior to the prostate and were removed by a suprapubic operation Patient entirely relieved

Case 4 —Aged 71 years Pain in the head of penis, neck of bladder and over pubes after passing water Frequent attacks of hematuria, one attack of ischuria Prostate much enlarged Double castration performed Fifteen days ofter prostate sufficiently shrivelled to allow the introduction of stone searcher, when a calculus was located It was small and easily crushed Patient made a slow but complete recovery (*Therapeutic Gazette*, 1898, p 73)

Watson reports three cases of castration for the relief of prostatic hypertrophy

Case 1 —Aged 58 years Patient suffered from symptoms of urinary obstruction for several years Several attacks of retention of urine After use of catheter symptoms became worse, and before the operation patient had a painful desire to urinate every fifteen minutes day and night. During five days preceding operation he was unable to void urine spontaneously *to* the extent of an ounce or two in twenty four hours Continuous drainage of bladder by a catheter in the urethra was not tried before operating Both lateral lobes of prostate were markedly hypertrophied, the surface of the right lobe some what uneven and in the course of the vas deferens there was a hard, round body the size of a pea, which was movable Castration was performed through two incisions, one over each testicle Operation somewhat prolonged by the presence on one side of an encysted hydrocele of the cord, which was dissected out. Immediately after the operation the use of catheter was discontinued Previous to operation retention followed if catheter was omitted No change in the frequent or painful desire to urinate At the end of thirty six hours, and interval of one hour and a half On the sixth day patient passed out four ounces of urine at each micturition spontaneously On the tenth day he was free from pain Three weeks after operation there was but an ounce and a half of residual urine, which was almost free from pus Distinct diminution of size of prostate Patient slept five hours at a time undisturbed In daytime he is obliged to urinate once in three or four hours Operation considered a complete success

Case 2 —Aged 69 years Both testicles removed through a single median incision Silght hypertrophy of lateral lobes The catheter passed nine and a quarter inches before entering the bladder Symptoms of urinary obstruction for three years, catheter could not be omitted without retention After operation catheter could not be omitted The wound did well up to forty four days after operation, no other improvement noticed, no perceptible change in the size of prostate So far, case is a failure

Case 3 —Aged 70 years Retention of urine Symptoms of urinary obstruction for several years, overflow of bladder for several months Patient had double inguinal hernia of long standing Prostate much enlarged, constant and painful desire to urinate and at times violent bladder tenesmus During the night following operation patient tore off bandages, got out of bed, and in a violent fit of coughing forced down the herniæ, distending the scrotum and putting the wounds on the stretch. Patient died on the ninth day No spermatozoa were found at the time of operation Autopsy showed hypertrophy in the form of distinct fibro adenomatous tumors, each lateral lobe containing a thickened capsule the size of a horse chestnut. No atrophy of the prostate occurred Vesiculæ seminales contained no spermatozoa Bladder the seat of chronic cystitis Extensive pyelonephritis of both kidneys (*Boston Medical and Surgical Journal*, 1895, p 378)

Kümmel reports three cases of successful operations of hypertrophy of the prostate by excision of the middle lobe of the prostate This is the same method which is employed by McGill, Harrison, Landerer, Benno, M Schmidt First the bladder was disinfected and opened under the simultaneous use of Nelaton's catheter and the use of antiseptic solutions Then the middle lobe of the prostate was caught with a forceps, drawn upward and slowly singed by means of a Paquelin cautery, or a glowing loop, afterward in several parts, working around as in cutting out the roots of a potato Then a Hegar's dilator was employed, a permanent catheter introduced, and the wound closed by suture The mucous membrane was sutured separately with catgut Nelaton's catheter was removed fourteen days later The three patients were 65, 70 and 72 years old, respectively The cure was complete (*Deutsche Med Woch*, 1889, pp 310 and 314)

Dr William T Belfield reports fifteen cases of severe cystitis dependent on prostatic enlargement, confirmed by autopsies and says that he found intravesical tumors in eight, three times, as a single myoma or middle lobe, and in five as a more or less complete ring around the vesical orifice In five, the growths were deeply intraprostatic, and in two diffuse hypertrophy with encysted calculi In eight of the fifteen cases the prostatic obstructions were removable Dr Belfield recommends operation by perineal or suprapubic incision

In cases of prostatic enlargement where the cystitis is still slight he recommends the use of an intense galvanic current, after Apostoli's method with uterine fibroids (*Medical Record*, 1888, Vol xxxiii, p 272)

Heine reports four cases of successful cure of hypertrophy of the prostate by parenchymatous injections, consisting of a solution of iodin, with no suppuration after the injections The solution was kali iodid, 2 drams, tincture of iodin, 2 ounces, and, aqua distil, 6 ounces Between twelve to twenty drops at a time were used After a second injection the prostate was considerably diminished in a man of 75 years Heine claims this as a radical method In one case the prostate, after the injections, was even smaller than is usual with a healthy man (Langenbeck's *Archiv für Klin Chirurgie*, Vol xvi, pp 79–95)

Mayer and Haenal report a case of hypertrophy of the prostate relieved by castration Patient, aged 70 Prostate much enlarged, with cystitis and ammoniacal urine, tenesmus and toxemia, in whom catheterization was almost impossible on account of the pain produced Several ounces of residual urine Several days after operation improvement was noticed Two weeks later the tonicity of the bladder began to return In three weeks, urine nearly normal In six weeks the prostate had shrunken to the proper dimensions and the bladder emptied itself completely, no catheter being required Patient urinated every four hours, uric acid in reaction (*Centralblatt für die Krank der Harn u Sexualorgane*, Aug 25, 1894)

Helferich reports a case of typical hypertropy of the prostate in a man of 70 years, which he cured successfully by resection of the middle lobe of the prostate First, sextio alta, then injection of borate solution into the bladder, then excision of middle part of prostate

Bottini reports three cases of radical cure resulting from hypertrophy of the prostate This method is invented by himself and consists in galvano-caustic destruction of the growth The galvano cautery for the prostate is in form similar to the Soude angulane Mercier tube (Langenbeck's *Archiv für Klin Chir*, Vol xxi, p 1)

Dr Landerer's method of treating hypertrophy of the prostate consists in the removal of the middle lobe of the prostate, which is in many cases the only hindrance to urination This method was found by an attempt to remove a supposed vesical calculus, yet it really cured hypertrophy of the prostate This method is the same as that employed by Volkmann and Thompson for the removal of tumors of the bladder The scissors used is a combination of polypi scissors and hollow chisel scissors (*Deutsche Zeit für Chir*, Vol xxv, pp 5–11)

Leisrink reports a case of total extirpation of the prostate in order to remove a prostatic tumor The prostate was enlarged to the size of an apple, almost closing the lumen recti, the mucous membrane of the rectum and the tumor The adhesions were separated with the finger and the prostate isolated The small tumors were removed with Cooper's scissors, the wound dressed with iodoform The next day the wound was washed with thymol solution Complete success (Langenbeck's *Archiv für Klin Chir*, Vol xxviii, pp 5–78)

Ricketts reports a case of enlarged prostate relieved by castration Patient aged 64 On second day after operation the patient urinated with greater ease and pain was slight He slept four hours at a time during the night, where formerly he had been obliged to urinate every hour, urinating thirty times daily Condition continued to improve (*Cincinnati Lancet-Clinic*, Dec 1, 1894)

Fremont Smith reports a case of enlarged prostate in which double castration was performed Patient was an old man with prostatic hypertrophy and cystitis general infection and threatened uremia After operation catheter was used twice daily at first Twelve weeks later patient reported to Dr Smith that he had gained forty-five pounds in weight and had no symptoms of cystitis (New York *Med Jour* , 1895, Vol lxi, p 585)

Gluck and Zeller have made experiments on living dogs and cadavers for total extirpation of the bladder and prostate They find that dogs can easily stand extirpation of the bladder and prostate They also sutured the urethra to the abdominal wall Dr Sonnenburg has followed this method on a living man with success *Verhandlungen der deutschen Gesellschaft für Chirurgie*, Vol x, pp 158-166)

Kümmel has produced artificial atrophy of the prostate by castration in eight cases, with the desired result

Wagener of Leipzig reports that under six operated cases, four persons died of acute mania, while under fifty-three other cases from different countries, no such consequences are reported (Schmidt's *Jahrbucher der gesemtan medicin*, 1895, pp 162-3)

In the German International Congress of Innerliche Medicin, Dr Reinert of Rubingen gives a new treatment for prostatic hypertrophy He reports three cases which were considerably relieved by the ingestion of the preparation of the prostate glands of animals (Trans Deutscher Congress f innerliche Medicin, 1895)

Thomas reports a case in which castration in a patient, 65 years of age, who had had symptoms of prostatic hypertrophy for fifteen years, had caused "considerable improvement" Urination formerly was very frequent, but after operation he was required to urinate only three times a day Pittsburg *Medical Review*, September, 1894)

DISCUSSION

DR G **FRANK LYDSTON** of Chicago—Dr Johnson's paper is one of the fairest presentations of what may be termed the unusual method of treatment for hypertrophied prostate—for it is of that portion of his paper particularly that I will speak—that has thus far been presented He has eliminated what has seemed to me the principal weakness of the successful cases of orchidectomy and vasectomy thus far reported, namely, the effect of rest in producing diminution in the size of the prostate and improvement in the symptoms secondary to prostatic enlargement. It has been my experience that improvement very rapidly occurs in the majority of cases that are put to bed under proper measures of treatment There is in all instances a greater or less degree of more or less recent hypérplasia due to irritation, this is a plus condition which rest very rapidly subtracts In many of the cases that have been reported, considerable improvement has been claimed within a short time after the orchidectomy or vasectomy has been performed In a large proportion of these the accuracy of the report is open to doubt, because of the fact that the rest incidental to the preparation for and following the operation must necessarily have subtracted to a certain degree the superadded conditions of congestion and recent hyperplasia present in such cases There is no doubt but that vasectomy, and more particularly orchidectomy, are founded upon logical and philosophic principles It is unnecessary for me to enter into a discussion of the influence of the testes upon the development of the prostate and seminal vesicles J William White has presented this subject so explicitly and fully that there is practically nothing to be added to it There is no question but that the nutrition of the prostate is controlled or modified to an essential degree by what may be termed the physiologic reflex of the testes There is also no question but that removal of these organs will produce an alteration in the nutrition of the prostate which, in the normal organ, results in atrophy, and in abnormal conditions of the organ results in shrinkage of the adventitious tissue and benefit or cure of any abnormal conditions of the bladder which may exist as secondary features of obstruction at the vesical neck I have found that in the majority of cases there is marked opposition to the operation of castration on the part of patients Very few patients indeed will consent to the operation until their sufferings become so extreme that they are compelled to submit to obtain relief Under such circumstances they are willing to submit to almost anything that promises them relief

The sentimental and cosmetic objections advanced, even by patients who have long since been deprived of the function of the testes, are so strong that the range of cases to which the operation can be applied is considerably narrowed On this account vasectomy, which, although not as efficacious as castration, is beneficial or curative in a fair proportion of cases, may often be performed where castration would be refused I believe that castration has too frequently been performed in cases which were by no means suitable to the operation One thing is certain, that in the presence of a fair condition of the kidneys, no man, whose sexual function has not disappeared, should be submitted to castration No matter how severe the local symptoms may be, it would be far better to submit the patient to the radical operation of prostatotomy or prostatectomy, or even to perform palliative suprapubic cystotomy and the formation of a permanent suprapubic fistula, than to run the slighting risk of performing an operation for which the patient would not only reproach himself, but what is much more to the point, as far as the reputation of surgery in general is concerned, reproach us Personally, I am in favor of radical operations upon the prostate itself, performed at an early period, when the operation is not only safe but offers an excellent prospect of radical cure The trouble has been in the case of prostatotomy and prostatectomy, that these operative measures have only been resorted to in desperate cases The general practitioner has been led to believe that no operative measures are warrantable in hypertrophy of the prostate, and so we have gone on and on in neglecting our cases until the last moment when the old man has been operated upon simply because he was going to die anyhow, and then we marvel at the non success of radical operations upon the prostate I unhesitatingly affirm my belief that the statistics of operations upon the prostate thus far obtainable are well nigh valueless, so far as showing the results of cases operated on under proper conditions is concerned

I agree with Dr Johnson in his statement that a digital examination per rectum should be made in every case where there is a suspicion of prostatic disease He is correct in his assertion that palliative treatment often cures supposedly grave cases of prostatic disease In many instances the condition of enlargement of the prostate is one simply of hyperplasia and congestion which lasts for many years before fibroid degeneration or adenomatous change occurs Under these circumstances massage of the prostate and measures calculated to relieve irritation of the vesical neck, which is very often responsible primarily for the hyperplasia of the prostate, are frequently curative

I can only compliment the doctor upon the careful manner in which he has operated upon and studied his cases His favorable results, in my opinion, in what are certainly serious operations upon old men, are due in great measure to the care with which he prepares the patient for operation I believe that Dr Johnson is correct in attributing the mental symptoms that appeared in three of his cases to renal disease I do not like the expression, however "due to the presence of albumin in the urine" The albumin has nothing to do with it In such cases it is the insufficiency of the kidney, as far as the elimination is concerned, that is responsible for the brain symptoms, and these brain symptoms, by the way, are by no means infrequent with operations upon the bladder and prostate, or indeed any operation for the relief of chronic genitourinary disease I have in mind at the present moment the case of a gentleman who was insane for five months with suppression of urine, coming on four weeks subsequent to a successful perineal section for the relief of deep stricture The gentleman eventually recovered completely

The hernia operations performed in the class of patients coming under Dr Johnson's care were certainly followed by very remarkable results, and are very encouraging with respect to the radical cure of hernia, especially when we consider the extreme age of the patients operated upon

In conclusion, I will state that I am especially pleased with the cases reported by the author because of the fairness with which he has presented them Such cases are reliable data from which to work in determining the advisability and value of castration and vasectomy for prostatic disease There is no doubt but that these operations have a brilliant future before them The principal objection I have to them is that they are liable to interfere with the progress of radical operations upon the prostate, which, if performed early in life, will obviate long years of suffering, and will bring about a radical cure in cases that eventually would be compelled to submit either to radical operations upon the prostate at a time when the results would be extremely doubtful, or to castration It must be remembered, that there is a large number of cases in which the patient suffers fearfully from prostatic disease, yet the sexual function remains practically unimpaired, and castration is not to be thought of for a moment Such cases as these in my opinion will always constitute a demand for earlier and improved operations upon the prostate proper

Dr J B Murphy of Chicago —I desire to compliment Dr Johnson on his excellent paper, and more particularly to congratulate him, first, on the line of investigation he has chosen, and, second, on the success he has attained in this unpromising and neglected field of surgery The general practitioner, and, indeed, the general surgeon, are too prone to say to the unfortunate victims of prostatic disease, "Your trouble is one of the diseases of old age, and little, if anything, can be done for you " The poor old man is thus doomed to continue suffering such pain, such agony, such nocturnal disturbance, in short, such torture, that all things of the world, including life, are of negative value to him

I feel that Dr Johnson deserves the thanks of the Association for presenting this subject in such a terse and forcible manner The emphasis placed on the careful examination should be reiterated, and particularly the careful sounding of the bladder for post prostatic calculi, and the combined recto digital and sound examination for intra prostatic calculi These are many times overlooked, and produce the most painful conditions of the prostate To prevent the "catheter life" of the aged is worthy our best efforts, and Dr Johnson has succeeded admirably The cure of the herniæ was of great value to the patients, and the results as far as life is concerned encourge the daily practice of this operation It pleases me that so much stress was placed on the rapidity of operation, as I am sure the element of time was a most important factor in securing success in the old and degenerated subjects I saw in his Infirmary Another good point made by the essayist is the avoidance of incision or manipulation of the scrotal tissue This tissue is very prone to infection if lacerated or exposed The improvement of the vesical symptoms took place slowly in most of Dr Johnson's cases This corresponds with the course of my cases, as I have seen none of the instantaneous cures supposed to follow this operation I am in favor of orchidectomy for prostatic disease I had an opportunity of observing some of the author's work and to see many of his cases after operation His results were very gratifying

Dr Ochsner of Chicago--Six months ago, at a meeting of the Mississippi Valley Medical Association, I drew the attention of the surgical section of that body to the fact that in old men hernia frequently became exceedingly troublesome, which had formerly usually been supported by means of trusses This I considered to be due to the increase of intra abdominal pressure, which was necessary to evacuate the bladder on account of the obstruction caused by the enlargement of the prostate gland Having had an opportunity to observe many cases, and having had charge of five, in all of whom I relieved the condition by means of the operation which Dr Johnson has described, and in all of which the result was extremely satisfactory—the patients being at once relieved of the difficulty resulting from the presence of the hernia and from the obstruction—has caused me to recommend this procedure I am gratified to know that Dr Johnson has made use of the extraordinary opportunity at his command in having care of such an enormous number of these cases, and I am equally gratified to learn of the excellent results In children, we have a condition somewhat similar, and herniæ are very much more common in male than in female children, although I do not remember the proportion, This difference is largely due to the fact that the male children suffer from phimosis In a very large number of children I have cured the condition by simply operating to relieve the phimosis, keeping them in bed with their hips elevated for a few weeks thereafter This method cures, practically, all cases of male children suffering from hernia The fact, however that hernia occurs in Jewish children does not alter the question, as these boys will also be cured if treated in the way I mention We have here a condition which is very similar, and I think it is worthy of consideration I have performed the operation a number of times with equally good results

Dr Alexander Hugh Ferguson of Chicago —The operation for the radical cure of hernia in addition to removal of the vas deferens and castration being an additional danger to these cases, points out the comparatively safe manner with which gonangeiectomy and orchidectomy may be performed It also supports the theory of the ability of old people to withstand operations It has been my good fortune to see most of the cases reported here today by Dr Johnson, and although I have not made a critical examination of them, I learned from themselves that they were completely relieved of their former bladder trouble, or were vastly improved I can also bear testimony to the careful aseptic surgical work done by Dr Johnson at Dunning Being a visiting surgeon to that institution myself, he has assisted me in a large number of operations on the aged poor

It is not neccessary on this occasion to say anything about the different methods for radical cure of hernia Ever since Dr White of Philadelphia, in 1893, brought this treatment prominently before the profession, for hypertrophied and enlarged prostate, several hundred cases have been treated in this manner, and even the most conservative surgeon must admit that the treatment is beneficial in a large percentage of these cases Dr Johnson has been fortunate in the selection of his cases, and the results he has given us today are exceedingly happy It must not be taken for granted, however, that all prostatiques will behave so well and so completely recover after either of these operations You may call it empirical surgery, if you please, but the good results obtained in cases that have not yielded to hygienic, medical and mechanical treatment, justify us in performing these operations, and to obtain the best results the cases must be selected, as was done by Dr Johnson

Dr F C Valentine of New York—I cannot agree with the author of the paper In the largest service in Europe, castration has not been done for four years, this is true of Paris and Berlin Vasectomy is also very rarely done, and then only when the patient demands operation It has the appearance of being simply tentative In the course of my studies in Paris and Berlin, it was a very easy matter to detect men who had been frequently catheterized, by an examination of the prostate, and I saw several in life who had regained as much use of the bladder as if they had been castrated The results of castration have been discouraging to most men, and men who have had such invariably brilliant results have special skill, or are specially fortunately situated I think it is time to be conservative, and in making up your mind to relieve a prostatic obstruction, do not always think it necessary to remove the testicles Bearing in mind the unfavorable reports that we have of this operation, I would prefer to hesitate in performing it, and would certainly not do it until I had exhausted every other resource

Dr W J Mayo of Rochester, Minn —I have had considerable experience with these cases in institutions with which I am connected, and it has been our rule to operate upon all patients that were otherwise well for the radical cure of hernia and in all of the cases in which there is prostatic hypertrophy we castrate at the same time I have no doubt that many cases not operated upon die from strangulated hernia and obstruction Our method relieves the hernia and the urinary difficulty at once There is one variety that is somewhat difficult to handle and that is those cases complicated with unreducible hernia Insane patients stand the operation well, except that the wound sites are very dirty and the skin in all of these patients is very oily Before and after an operation for unreducible hernia, the patient should be kept in bed for some time on a modified diet

Dr Johnson in closing—I am aware of the condition of the affairs in France and Berlin, and of the opinions of the leading men in this country and Europe I have nothing further to say, except to refer to the conclusions in my paper

SELECTIONS

Treatment of Seasickness—An experience of five years on a transatlantic steamship line ought to teach something about the therapeusis of this affection, and such an experience Dr Hugh Taylor of Southampton, endeavors to convey to the *Lancet* He says The nausea and subsequent vomiting of the first few hours are to a passenger prone to this malady almost inevitable, but seldom require interference, though the retching may become distressingly violent and, if accompanied by streaks of hemorrhage, *especially alarming to the patient.* I have found that the best way of relieving this condition is to apply a mustard leaf to the epigastrium, to give a hypodermic inj [illegible] ome crushed ice to suck, and to insist on the recumbent position being maintained by the patient A whiff of amyl nitrite or chloroform is often useful, alcohol is best avoided, though a little iced champagne may be sipped in very small quantities The frequently present constipation must be relieved by an enema or suppository, as purgatives by the mouth will usually be quickly rejected Too much must not, however, be expected of this or any other line of treatment, but the urgency of the symptoms usually abates in from twelve to forty eight hours, the patient gradually acquiring that stability of the nervous system nautically termed "getting his sea legs" The cases of prolonged nausea and seasickness in which the patient refuses or rejects all food are very trying both to the invalid and to the surgeon If the cabin is a fairly large one and is not crowded I think these cases do better in their berths than on deck, though meddlesome friends will urge them to go on deck, to "walk about," and to "fight against" the malady This unequal combat generally ends in the victory of Father Neptune, and the vanquished one staggers or is carried below—sick, blue with cold, and generally wretched Hot bottles, blankets, a little stimulant, hot beef tea, will quickly make the patient more comfortable For general fluid nourishment I use beef juice, frequently retained, especially if the first two are mixed previously with a little powdered ice and administered in teaspoonful doses If they are rejected they should be given again directly the fit of vomiting is over As regards drugs I used with considerable success a prescription of chloroform, nux vomica, and compound tincture of lavender An alkalin stomachic mixture with nux vomica is also useful after the acute symptoms have vanished, it assists a languid or capricious appetite A dose of bromid of potassium and chloral or a hypodermic injection of morphia is beneficial at night, allaying restlessness and procuring sleep In those cases which essay the ordinary saloon fare, anything in reason may be allowed them One woman insisted that sauerkraut was the only thing which would relieve her, and it certainly on the trip in question seemed to stop the sickness, though it failed to do so on a subsequent one Among adults there are some who, without any vomiting or nausea, suffer from persistent and severe headache and others who suffer from continuous intense giddiness, the former may derive benefit from phenacetin and caffein, bromid and chloral, or from nitroglycerin The discomfort of the latter is only alleviated by the maintenance of the horizontal position Children rarely suffer from seasickness, they are sick for a few hours and then are soon running about. A gentle laxative to combat the costiveness usually induced in them by a sea voyage and a little bromid and chloral at night will soon put them right, as a rule My voyages have never lasted longer than ten days, so that in the case of longer trips one's experience might probably be greatly modified I have never seen the numerous "quack" remedies do the slightest good, nor have I ever seen the at one time much vaunted "chlorobrom" retained where bromids of potassium and chloral were rejected by the stomach In conclusion, I would say that a farewell dinner or other jollification the day before commencing a sea voyage is to a person subject to seasickness the very worst possible preparation for it A blue pill followed by a Seidlitz powder is far better, though certainly not so festive

On "Seeing the Case a Little Sooner'—In the *Brooklyn Medical Journal*, July, Dr W L Chapman reports a case of extensive necrosis of the bones of the hand following felon The patient was a female, aged 30 years, and married While dressing one of her children she pricked the end of her index finger with a safety-pin Severe pain set in within twenty four hours, when she was awakened from sleep by a throbbing pain in the injured finger Her family physician could not be found so that a comparatively unknown physician of their neighborhood was called in This physician properly diagnosed the case as a felon, made an incision of the last phalanx down to the periosteum and dressed the wound antiseptically The dressings were repeated daily for three or four days, at the end of which time the entire hand was swollen and painful The family discharged the first physician and sent for the writer of this paper, who found a general cellulitis of the hand Incision of both palmar and dorsal aspects of the hand was performed and iodoform gauze inserted to secure drainage The constitutional symptoms shortly abated, but the wounds continued to discharge until three weeks later, when the middle phalanx fractured spontaneously Two days later the physician amputated the finger, but finding the metacarpal bone involved, removed that also The metacarpal bone was not largely affected, but the patient had become greatly debilitated and he was afraid to leave any affected bone behind The family was very angry with the physician who first treated the case, and the later practitioners had some difficulty in dissuading them from bringing suit against him for damages They were ignorant people, and attributed the loss of the finger to the unskillful treatment of the first physician They could not have obtained any damages, as the physician had treated the case properly, but it might have put him in a most unpleasant predicament and done him unmerited injury Dr Chapman closes his report with the following observations as to the medico ethic situation in this and similar cases "There is no doubt that the family might readily have found a plenty of 'ambulance chasers,' or unscrupulous lawyers to take the case in the hope of scaring him into a settlement, and a careless remark from either of us would have caused them to undertake it. Many damage suits for malpractice are caused by the statements of the physician who saw the case at its termination In order to relieve himself of any responsibility in the case he throws the blame on the one who first attended the case There is one statement occasionally made by physicians which is a disgrace to the medical profession, lowering to the one who makes it, and injurious to his colleagues, its use is altogether too common It is, 'If I had only seen the case a little sooner' The reason I speak of the medico legal part of it is that there are two cases pending now for similar affections One was lanced, but did not terminate so favorably, the patient died The other one is just like it I have not the privilege of mentioning these cases directly, as I heard of them through friends The suits are about to be brought"

PRACTICAL NOTES

The Value of Digitalis in Pneumonia—Maragliano states that he has established beyond a doubt the specific action of digitalis on the pneumonia coccus A very small amount will kill the cocci in a culture and also neutralize the toxicity of pneumonia toxin in injections Owing to this effect of the digitalis in neutralizing both toxins, pneumonia patients are able to stand much larger doses of digitalis than healthy persons—*Gaz d Osp e d Clin.*, No 31

The Choice of an Alkalin in an Acid Dyspepsia is not an indifferent matter, as Dubard has established that the acidity and pyrosis connected with the presence of organic acids in the stomach are rendered more intense by sodium bicarbonate, while they are favorably affected by the magneso calcareous powders On the other hand, in true "hyperchlorhydrie," especially when there is pylorism, the preparations of lime and magnesia aggravate these conditions, while sodium bicarbonate is beneficial—*Semaine Méd*, July 20

Painful Dysphagia Evidence of Syphilis—J Garel calls attention to the fact that every person who complains that it has hurt him to swallow for the last few weeks, three at least, should be considered a syphilitic and treated accordingly Syphilis can be diagnosed at once from this one symptom of persistent dysphagia *at any stage* It is frequently the first or only symptom recognized by the patient. The pain vanishes with forty-eight hours' treatment with potassium iodid, unless it is due to that extremely rare cause, incipient cancer or tuberculosis of the throat, which can thus be differentiated—*Semaine Méd*, July 6

Holocain—Randolph (*Johns Hopkins Hospital Bulletin* for July) records fifty four cases in the eye clinic with the use of holocain He concludes that as an anesthetic it is sufficiently effective, and says "In those cases where a test was made of the rapidity of its action, as for instance, in foreign bodies in the cornea, the quickness with which anesthesia was produced was striking Whether the anesthesia produced after two minutes is sufficiently profound to guarantee a painless iridectomy or a satisfactory cataract extraction I did not determine, but in those cases where operations of this character were performed, and where the holocain was instilled just as we do cocain, no difference was observed in the anesthesia from that produced by the latter"

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SATURDAY, AUGUST 27, 1898

THE NATURE OF THE ANTAGONISM BETWEEN TOXINS AND ANTITOXINS

The antagonism of toxins and antitoxins is a subject in regard to which our actual knowledge has been limited thus far, and any contribution is therefore welcome We know really very little about the true nature of these substances, our therapeutic acquaintance with their qualities has been gained by experiments suggested by empirical observation, not thought out and elaborated à priori from any actual knowledge of the true nature of the materials dealt with The how and why there exists a therapeutic antagonism have been up to the present, mainly matters of conjecture, not of knowledge, and whether it is chemic or bio-chemic, or more strictly physiologic, has been disputed with more or less weight of argument on either side

A late issue (August 4) of the English scientific publication "Nature" contains an abstract of a communication to the Royal Society, June 6, by Messrs MARTIN and CHERRY that seems to add at least some facts on this matter of the antagonism of toxins and antitoxins BEHRING, EHRLICH, KANTHACK and BRODIE had advocated the view that this antagonism was a chemic one, somewhat analogous to the neutralization of an alkali by an acid, while BUCHNER, CALMETTE, METCHNIKOFF and others have maintained that it is indirect, and operates through the cells of the organism. If, therefore, it can be proved that antitoxin neutralizes toxin outside of the body, *in vitro* and not necessarily *in corpore*, it would go far to establish the theory that the action was a chemic and not a physiologic one CALMETTE had shown that in a mixture of cobra poison with a neutralizing quantity of its antitoxin and heated to a temperature of 68 degrees C for ten minutes, the toxin retained its powers, while the antitoxin was destroyed The authors considered this experiment inconclusive, as not taking into account the element of time, which should be considered as well as that of temperature in estimating chemic action They therefore made a series of experiments on guinea-pigs, with a mixture of one cubic centimeter of antitoxin to twice, three times, and four times the usual fatal dose of snake venom In the control experiments with the venom only, all of the animals died within a few hours The mixture was allowed to stand at the usual laboratory temperature of 20 degrees to 23 degrees C for the period respectively of two, five, ten, fifteen and thirty minutes, then pipetted off and heated for ten minutes to a temperature of 68 degrees C and then injected The animals subjected to the mixture of the stronger doses of venom that had stood for ten minutes or less mostly died or were very seriously affected, all of those that received the fifteen-minute mixture survived, though two were sick, while the thirty-minute mixtures produced no symptoms whatever, as was also the case with a similar series of unheated mixtures in the same proportion that had been allowed to stand for eight minutes before injection Similar results were obtained with diphtheria toxin and antitoxin

These experiments seem to show as far as anything can that the neutralization of toxins may occur *in vitro* and that the vital processes in the organism or the body cells are not essential to the process, and unless we assume what appears hardly justifiable, considering the usual mode of its preparation, that the antitoxin itself possesses some vital properties that are active in it, it must be some sort of chemic reaction that takes place Messrs MARTIN and CHERRY, however, have supplemented the above experiments with another that appears equally conclusive, but in a different way The molecular sizes of diphtheria toxin and antitoxin appear to be quite different, the toxin passes freely through a film of gelatin in a Chamberland filter under pressure, while the antitoxin is retained They took a solution of diphtheria toxin, equal to eight fatal doses per cubic centimeter, and mixed it with a sufficient amount of antitoxin to neutralize it, allowed the mixture to stand for two hours and then passed it through the gelatin filter Varying quantities of this filtrate up to four cubic centimeters (= 32 fatal doses) were then injected into guinea pigs without bad results, not even a local edema was produced, and the animals throve under the injections The unavoidable conclusion from this experiment is that the toxin was neutralized before filtration, as, were it otherwise, there was nothing to prevent it passing through a filter, as it had been repeatedly observed to do in fresher mixtures

While the investigations of MARTIN and CHERRY throw a very decided light on the nature of the antagonism of toxins and antitoxins and leave us to infer with almost a certainty that it is a chemic rather than a vital one, they still leave us almost as much as ever in the dark as regards the real character and nature of the two substances This assumption that the toxin is an albumose is perhaps a reasonable one, more so, indeed, than the suggestion based only on the apparent size of its molecules that antitoxin is a globulin Whatever they may be, however, it is an important gain to know something more of the nature of their inter-reactions

Although the reaction seems to be essentially a chemic one, it is also possible that it is especially favored by the vital processes within the body When we consider the start that the toxins practically have in disease, it would appear probable that this must be the case to some extent, as otherwise the antitoxins could hardly be as effective as we find them to be, especially in diphtheria. In any case there is probably some natural resistance of the system to be accounted for in the practical problems of the action of these agents on the organism

HAY FEVER.

Medical literature can give us no definite data as to when this peculiar affection was first regarded as a distinct and separate disease Unmistakable cases were reported in the sixteenth century, and since that time the disease has been becoming steadily more and more prevalent The fact that there is a hay fever association in this country, which has records of over two hundred thousand cases, will show how extremely common the affection is in the United States Indeed, this country and England are its principal seats, the inhabitants of Germany, France and other countries of continental Europe affording comparatively few cases It might be stated here as a rather curious fact that hay fever is but infrequently encountered among immigrant Germans (JACOBI) and French, even in the regions where native English and Americans are particularly prone to attacks

Since its earliest discovery the cause or causes of hay fever have been enveloped in doubt Every conceivable reason, from the blessed sunlight of heaven to peculiar odors of animals or flowers, has been eagerly accepted and as quickly rejected It was only when the gloom of mysticism and empiricism began to give way to the light of earnest thought and scientific study that some order came out of chaos It was early recognized that the disease occurred in several successive generations, so that heredity was looked upon as a factor of some importance Its annual appearance in many sufferers not only on the same day, but at a certain fixed hour, has been noted by many observers indeed, the victims themselves often predicted accurately the hour of their first sneeze Cases are numerous of the influence of the smelling of a rose in the production of the disease, and all are probably familiar with the case of MACKENZIE in which an attack was precipitated by his giving his patient an artificial rose to smell Mere intelligent observation of a picture representing some farming scene has been a sufficient cause to bring on an attack These and many other instances of a similar nature have proven beyond the question of a doubt the neurotic element of the disease Among other predisposing causes might be mentioned the male sex and the white race, attacks being of exceeding rarity among negroes Age does not exert much influence, all ages being susceptible, usually, however, the victim has been subject to several annual attacks before the middle period of life

The symptoms on the part of the respiratory tract led to early explorations of the nasal cavity for possible cause The observers were not disappointed, almost invariably the subjects of hay fever have had some pathologic condition existing in the nose, ulcer, polyp, hypertrophy or congestion of the turbinates, deviation of the septum, remains of adenoids in the nasopharynx, chronic nasopharyngitis, have all been noted by various writers It might well be stated as an objection that the *nose-and-throat man* who can not find at least one of the above conditions in every case that presents itself should give up the specialty, so that possibly a pathologic nose does not play the important part it was formerly thought to

Among other predisposing causes the one that has gained the most support of recent years was that advanced by BISHOP at the annual meeting of the AMERICAN MEDICAL ASSOCIATION in 1893 In his own words, "an excess of uric acid in the blood causes hay fever" He showed that many patients afflicted with hay fever have an excess of uric acid in the blood during the morning, further, that these were the ones that were attacked during the early morning hours He thought the paroxysm of hay fever analogous to an attack of epilepsy superinduced by the irritation of some pathologic meningeal process, tumor, adhesion, or hypertrophied bone, and that an attack, itself caused by a setting free of uric acid, on account of the pathologic condition of the nose was determined to that area BISHOP claims that his theory does not at all interfere with the neurotic theory, but on the other hand, seems to clear up some points previously obscure, as for instance the onset in the morning He thought that with the correction of the possible pathologic nasal conditions present, the attacks were switched off, as it were, from involving the nose, but that the excess of uric acid in the blood would be certain to cause symptoms of uricacidemia elsewhere in the body Naturally, then, he directed attention both to the cure of any nasal disease present and to the prevention of an abnormal quantity of uric acid in the system

The exciting cause of the disease is undoubtedly the pollen of plants, as proved over thirty years by the beautiful and laborious work of BLACKLEY He demonstrated, to the satisfaction of the entire profession, the increase of pollen in the atmosphere at the time of the greatest prevalence of hay fever, and its gradual disappearance as the season verged toward fall

TREATMENT OF ENTERIC FEVER BY SYSTEMATIC COLD BATHING

Dr WILSON of Philadelphia, who, as is well known, has, for a number of years, consistently practiced the treatment of typhoid fever by cold bathing in the German Hospital in Philadelphia, now reports[1] the statistics of 741 cases, of which 55 died, the mortality being 7 42 per cent In these figures are included all the cases of typhoid fever which entered the hospital from Feb 1, 1890, until Jan 1, 1898, excepting one patient who entered one afternoon and died the following morning, the anatomic diagnosis being typhoid fever This patient was not bathed

An analysis of the cases of enteric fever for the years 1896 and 1897 is also presented For the purpose of comparison there is appended the statistics of the three principal hospitals in Philadelphia for the year 1896 The average mortality of 403 cases in these hospitals was 9 92 per cent In these institutions some cases are treated by systematic cold bathing according to BRAND's method, but this treatment is not general, and Dr WILSON can not state what proportion of the cases are bathed and what treated upon other lines During the same year 64 cases were treated in the German Hospital, with seven deaths, a mortality of 10 9 per cent During 1896 2490 cases of typhoid fever were reported to the Board of Health at Philadelphia The number of deaths was 402, mortality 15 14 per cent In 1897 the mortality rate was 13 39 per cent

In this article Dr WILSON also describes certain modifications in the method as originally formulated by BRAND These modifications have been gradually adopted as the result of experience

1 At the beginning of the attack purgatives, especially calomel, sometimes in fractional doses, are given Purgatives are not administered to those who enter after the tenth day of the disease

2 Cold is applied to the abdomen in all cases of marked abdominal tenderness, pain and hemorrhage

3 The treatment by systematic cold bathing is established as a routine method and is employed in all cases, the only contraindications are, speaking generally, the signs of peritonitis, hemorrhage, perforation Appropriate medicines are administered in response to special indications The proportion of cases requiring any medication whatever, has been found to be very small; not exceeding 10 per cent As convalescence begins, dilute hydrochloric acid may be given for a short time, and later, if anemia is present, some form of iron

4 The rule had been adopted, and is still in force, to repeat the bath whenever the axillary temperature reaches 101 4 degrees F The baths are repeated whenever necessary at intervals of three hours Formerly, however, baths were stopped as soon as the temperature ceased to go above this point A very interesting observation led to a modification of this rule, viz quite frequently patients with a temperature lower than 101 4 degrees would ask for baths because of the greater comfort obtained Hence there has been instituted the practice of giving one or two plunges a day during defervescence, and this has seemed to hasten convalescence

5 The fever wards in the German Hospital are small, each containing six beds The bath has been arranged at the end of the small ward, the graver cases are placed in the beds nearest the bath and carried by the attendants from the bed to the tub and back, while the milder cases and the improving patients walk to the bath with the assistance of the nurses In all cases the improving and milder cases rise from their beds every three hours, are assisted to the tubs by the attendants and return the same way In no instance has Dr WILSON had any occasion to believe that this modification of BRAND's original formula, namely, that a movable bath tub be placed at the side of the bed, had any unfavorable effects On the contrary, favorable influences upon the course of the disease have been noticed In addition to these empiric reasons there are good theoretic reasons for certain changes in the traditional methods of treating cases of long acute febrile diseases Among the complications of typhoid fever, bronchitis, bronchopneumonia and hypostatic congestion have always been prominent, no matter what the treatment These phenomena are, to a certain extent at any rate, due to the progressive weakening of the heart and mechanical derangement of the circulation Dr WILSON also believes that the development of somnolence, intestinal paresis, etc, is favored by the log-like, passive recumbency of the typhoid patient Muscular atrophy from disuse and deranged lymphatic circulation are also mentioned in this connection The experience in the German Hospital seems to point to the fact that enforced continuous repose adds to the original disease secondary nutritional disturbances due to functional disuse

6 The measure of success in the treatment by cold bathing is determined by the period in which it is begun BRAND's claim that the mortality is practically nothing when the cases are treated by his method from the beginning can not be confirmed in ordinary hospitals, because cases do not come to the hospital in the beginning of the attack Many observations, however, show that the earlier the treatment is begun the greater the reduction in the death rate Ordinarily the hospitals do not receive any cases of typhoid fever until toward the end of the first week, the great

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[1] The Philadelphia Medical Journal, July 9 1898

majority later than this, and quite a number as late as the middle of the third week At the same time there are many mild cases ("mild typhoid") admitted at any time during the progress of the disease, with so low temperature that but few baths are given These cases would probably recover without any treatment at all

Plainly, treatment by cold baths, begun late in the course of the disease, must largely fail as a general plan, and it is also plain that the bath treatment can not be claimed to shorten the course of mild cases of typhoid Dr Wilson believes, however, that these two groups of cases offset each other, and that the conclusions based upon statistics are justified

VENEREAL DISEASE IN FICTION

From Swift's "Tale of a Tub" it is evident that it was in the early eighteenth century *en regle* for young men "seeing life," to contract gonorrhea as a necessary part of their sociologic experience Dr Tobias Smollett, in the latter part of the same century, evidently also deemed it a necessary part of the social education of the young men Roderick Random, while an apothecary's clerk, contracts gonorrhea as a necessary part of an amour He cures himself and his female companion of this disease She, a woman of good standing in society originally, has sunk into prostitution through seduction According to her, in the eighteenth century, "The most fashionable woman of the town is as liable to contagion as one in a much humbler sphere She infects her admirers, her situation is public, she is avoided, neglected, unable to support her usual appearance which, however, she strives to maintain as long as possible, her credit fails, she is obliged to retrench and become a night-walker Her malady gains ground, she tampers with her constitution and ruins it She grows nauseous to everybody, finds herself reduced to a starving condition, is tempted to pick pockets, is detected, committed to Newgate where she remains in a miserable condition till she is discharged because the plaintiff will not appear to prosecute her Nobody will afford her lodging, the symptoms of her distemper have grown outrageous, she sues to be admitted into an hospital, where she is cured at the expense of her nose" Random's master, the apothecary, has a specific for venereal disease, which brought him in a great deal of money, that had no effect on tertiary accidents This is not surprising, considering the proclivities of this apothecary for substitution Venereal disease, impotence and seduction to sexual perversions are utilized by Dr Smollet, but only, however, as a realistic side issue in the retribution for sexual errors This phase is only with Smollett a part of the novel, for a purpose In his day, Lock hospitals were frequently started by practitioners, ostensibly for charitable purposes, but really for the same object that dispensaries are started today It is a singular fact, however, that the prejudices in cities against these was in the eighteenth century, in England, much less than it is today

In the late nineteenth century the employment of venereal disease to subserve the moral objects of a novel for a purpose has been revived by Sarah Grand Her first popular production, "The Heavenly Twins," dealt with the marital effects of syphilis acquired by the husband in youth She assumes, however, that syphilis insontium is an impossibility and that the male is always to blame The object of the introduction of the venereal element into "The Heavenly Twins," is to show that men of fast lives ran serious risks of infection with constitutional venereal disease It further teaches the sound sociologic doctrine that girls should not allow themselves to be married to such men, even if they had reformed mentally, unless their physical cure was equally well established A marriage occurs in "The Heavenly Twins," based on "love" between playmates The child which results from this marriage is born "old," with a "cold in its head,' and resembles "a speckled toad" An illegitimate child of the same father has identical characteristics The wife becomes progressively pallid, weaker and irritable from the day of her marriage till after the birth of the child Thereafter she becomes insane, with a psychosis of a type due to exhaustion, rapidly passing into dementia, and hence probably of luetic origin Although the topic is dealt with by Sarah Grand in a less revolting manner and with greater scientific probability than in Conan Doyle's "Round the Red Lamp," where tertiary effects are carried in full luxuriance to the third generation, still the problem involved in marriages with victims of syphilis is stated with equal force in both It is to be regretted, however, that neither of the two has the notion of introducing syphilis caught from the practice of kissing children, or from the employment of healthy women to wet-nurse a syphilitic child It would appear more desirable, if venereal diseases must be utilized in fiction for sanitary and sociologic purposes, that the fiction should deal with those innocently acquired, since these are the most dangerous Obstetric syphilis, contracted by the physician in the general practice of his profession, has often led to the moral downfalls of the onset of paretic dementia, and hence could not but furnish a valuable moral from a sanitary standpoin to the writers of the "novel with a purpose"

In her second volume, "The Beth Book," Sarah Grand strikes at a revived prejudice against the adoption of the treatment of venereal disease as a specialty by physicians As already stated, this prejudice was not strong in the English cities during the eighteenth century in proportion to its strength today Just ere the outbreak of the fifteenth century epidemic of syphilis this prejudice was particularly rabid On the modern principle of the effect of a new culture-medium on the microbe, the virulence of the epidemic as contrasted with the centuries old, practically edemic lues (Buret, "History of Syphilis") is readily explicable This virulence, however, gave acute characters to the old disease Society physicians, fearing ostracism refused to treat a disease which they claimed was unknown to Galen and abandoned the sufferer to the tender mercies of quacks and empirics Among the ranks of the medical profession have always been heroes who refused to obey society's behest and neglect suffering even among the vicious and criminal Prominent among these was that great reformer under the guise of satire, Dr Rabelais, whose generous disposition drew him toward this neglected class of patients In 1538 he made great efforts to reform the abuse of mercury in the treatment of the syphilitic patients at Paris Rabelais says that he "has often seen syphilitics when greased with mercurial ointment, their faces on edge like a knife and their teeth clacking like the key-board of a broken-down organ" In the treatment of syphilis Rabelais used mild mercurialization, guaiac and the hot air and other baths which had been previously recommended by Torella

Sarah Grand makes a plea similar to that of Rabelais for the treatment of venereal diseases in special hospitals The "Beth Book" deals with the social ostracism of a physician to a Lock Hospital because of the prejudice of the society people of the English countries against the practitioner of an admitted specialty of venereal diseases Among the British squirearchy (as a rule the narrowest snobocrats of the English speaking peoples) this prejudice flourishes in full luxuriance, stimulated by a Malthusian cant which the humane Malthus would have been the first to repudiate It is to be especially regretted that the absence of special hospitals for venereal disease from most American cities, demonstrates that this prejudice exists to an enormous extent among the speculative commercial classes who practically rule the business end of public and private charity The existence of innocently aquired venereal disease is a sufficiently potent argument against Malthusian cant of the type described It is to be hoped that "The Beth Book" may accomplish some reform in the English speaking countries in this particular, albeit the book, like "The Heavenly Twins," appeals in its style to the hysteric rather than to the well-balanced social reformer

CHOLERA BELTS

It is understood that the Army Medical Board consisting of Colonel Dallas Bache, Lieutenant-Colonel Charles Smart and Major Walter Reed, convened by the Secretary of War to consider the question as to whether or not the Government should issue the so-called "cholera bands" for the use of United States troops in the field, has made its report to the Surgeon-General of the Army It appears that the board investigated the literature of the subject, including the latest and best works on military and general hygiene, and the writings of the authorities on tropical diseases to determine the precise grounds on which the popular impression of the value of the abdominal band was based, for the board recognized the existence of a general impression among the members of the medical profession as well as among the laity, that the protection afforded to the abdomen by the wearing of a flannel band of sufficient width is beneficial in warding off attacks of diarrhea and dysentery It did not, however, find any conclusive evidence of the value of the band The authorities on the diseases of tropical climates recommend its use as a sanitary precaution, but these authorities are almost without exception, English physicians, and their remarks have a special reference to the insufficient protection afforded by the regulation clothing of the British soldier The highest English authority on both general and military hygiene says "The soldier wears no drawers, but in reality it is just as important to cover the legs, thighs and hips with flannel as the upper part of the body Drawers folding well over the abdomen form, with the long shirt, a double fold over that important part, and the necessity of the flannel belt is avoided" The English soldier, in temperate as well as tropical climates, is supplied with two abdominal flannel belts, for the reason that, during the night hours and while sleeping, the skirt of the shirt, not being held in place by the belt of the drawers, is liable to be drawn up, with a consequent risk of chill to the abdominal surface The board invites attention to the fact that it has not been found necessary to issue abdominal bands to U S troops serving in Arizona and New Mexico, a climate in which there is marked variation between the diurnal and nocturnal temperature, and rapid evaporation from the surface of the body, owing to the extreme dryness of the atmosphere The American soldier is provided with suitable woolen underclothing including shirt and drawers, the whole surface of his body is protected against sudden chilling, and the region of the abdomen guarded by two thicknesses of material Under these conditions the board considers that there is no necessity for the issue of the so-called "cholera bands" for the use of the United States troops in the field

CORRESPONDENCE

The Medical Department of the Army

Fort Hamilton, N Y, Aug 15, 1898

To the Editor —After the published statements of General Sternberg, Lieut Col Senn, Capt Munson, U S A, and others, perhaps nothing further is needed to offset the prejudiced and sensational articles which have appeared in the daily press from correspondents and from certain hysteric members of the Red Cross, seeking to aggrandize their own services by belittling the work and results of the Medical Department of the Army However I will venture my mite Sent to service with troops in the field at the time war was declared, attached to regiments, and later a member of the staff of the Second Divisional Field Hospital Fifth Army Corps there has been abundant opportunity at Chickamauga Park, at Tampa, on the hospital ship *Olivette*, and in Cuba, from which I returned on July 19, to see the workings of the Department under many and varied exigencies incident to the adaptation of its organization from a peace to a war basis.

It is to be noted that until after the landing in Cuba there was a remarkable freedom from adverse criticism by the lay or medical press or individuals. On the contrary, remarks complimentary to a high degree were frequently heard from line officers, to the effect that if war had developed defects in other staff departments, it had shown the soundness and efficiency of this one. The medical officers of the regular army, who, under the scientific guidance of General Sternberg, had for years rigorously and at frequent intervals inspected the sanitary conditions of posts and camps, the food and clothing, analyzed the water supply, and superintended the first-aid training of officers and enlisted men, continued their work at the Chickamauga and Tampa camps, and the records show how few men were left behind or accompanied the army of invasion with physical disabilities. While a great quantity of medical supplies were carried along on the *Olivette* and on the troop ships, our ambulances and transport wagons, of which a sufficient number had been provided by Colonel Pope, U. S. A., the chief surgeon, were denied ship room.

During the long trip from Tampa to Baiquiri, the *Olivette* commanded by Major A. H. Appel, with its eighty first cabin staterooms, accompanied the fleet, and whenever the sea permitted, received all sick from the crowded transports. Plenty of fresh air, ice, and suitable food brought about a speedy recovery in many men, who were consequently able to rejoin their companies on reaching land. At Baiquiri, as rapidly as men could be landed, they were pushed to the front with only travel rations, a change of underclothes and ammunition, leaving behind, in most cases, the medical stores of the regimental surgeons either on the transports or along the shore where the small boats had dumped them. Dependent on other departments, its own means of transportation being perforce left far behind, the difficulties confronting the Medical Department of carrying tentage, cots and supplies along with the rapidly advancing army, and keeping everything in shape for the quick relief of the hundreds of wounded and sick men liable to be thrown on their hands at any hour were truly immense, and reflection has not lessened my admiration for the executive work of men like Major Legard, Major Wood add Major Rafferty, who were burdened not only with their strictly professional duties, but with details of quartermaster and commissary work. However, a field hospital was on hand at the battle of Las Guasama, and the *Olivette*, steaming to Siboney received on board the eighty wounded, of whom not one, to the best of my knowledge, has since died from his injury.

Personally present during part of the battle of San Juan, I was amazed and gratified not only at the intrepidity and dexterity of the regimental surgeons and their hospital corps men while under fire, in dressing the wounded, but in witnessing how quickly the wounds of hundreds who were placed hors de combat in a few hours were quickly protected by their comrades with sterilized first-aid dressings. The worst cases were treated at Major Wood's hospital, which was as near the front as the firing allowed. The others returned by ambulances or wagons to Siboney, where the second and third divisional field hospitals joined their forces. Here tentage for nearly a thousand patients had been erected. Of the necessary antiseptics dressings and instruments there was a sufficient supply, though much still remained aboard several transports impossible of access, and the hospital ship *Relief*, under Major Torney, U. S. A., arriving soon after the San Juan battle, brought a great quantity more. Only a few men in all reached the Siboney hospital without having previously received a first aid dressing, and careful disinfection of wounds, dressings or operations were proceeded with as rapidly as was consistent with the patients' safety. I can speak with great pleasure of the uniform carefulness and attention to surgical cleanliness on the part of my colleagues, even when ready to drop from exhaustion incident to days and nights of almost continuous work. But one amputation from bullet wound and the very few cases of infected wounds speak volumes for their care and skill.

Upon the scene now appeared for the first time representatives of Clara Barton's Red Cross, who, with a doctor or two and several trained nurses, lent an assistance duly appreciated. It must not be for a moment forgotten, however, that what they did—and no one appreciates it more than those they directly aided—was but a drop in the bucket to what had been done and was being done by the Army organization. Suffering there was, of course. As Dr. Senn says, "war always has its hardships, it can not be prosecuted in parlor cars or club houses," and in spite of all defects and omissions incident to our first hurriedly prepared invasion of a foreign land, history, I think, will show that after no previous battle were the wounded tended so quickly, and with such good results and so little suffering. Respectfully, Louis P. Smith,

First Lieutenant and Asst. Surgeon U. S. A.

A Chain of Ethics in Medical Colleges

Toledo, Ohio, Aug. 15, 1898.

To the Editor:—It goes with the saying that medical colleges are very largely responsible for conditions existing in the medical profession. Conditions, as used above, include many things, and the word "responsible," in this same sentence, points prideward as well as in the opposite direction. One condition, as the word is used, is the general intelligence of the medical profession; another, the standard of medical knowledge which maintains, while professional honor, honesty, morality, etc., are others.

Medical colleges are alike responsible for the highest grade in learning, uprightness and respectability, for example, as they are for the lowest grades in the same spheres. Naturally one looks for a college bent principle to lean in the same direction throughout life, and the expectation is usually realized. There is among some members of the profession a positive antagonism to the "Code of Ethics." That antagonism had its origin some place, in some influence which was generated either by teaching or from observation, and medical colleges are in a great measure responsible for the existence of that unbelief. Like other evils, it would cost many times more to uproot it than it would have cost to have seen to the sowing of clean seed in the start.

Recently a physician said, during the session of a medical society, that he had been practicing medicine for thirty years, and that he had never so much as read the "Code of Ethics." There was an air of serenity about him which betokened a feeling of self satisfaction within, and as he stood in contemplation of the example of a self made ethical physician, which he presented to the society, the odds were, from his point of view so preponderantly against anything which the followers of the Code could adduce, that the expression of his face showed commiseration for that physician who had been under the dwarfing influences of the Code. Not much can be done with such a man. Probably the easiest way and best way is to leave him to the blissful enjoyment of his own company.

There are other kinds of anti code men, and anti code men for other reasons. These men skirmish in their home societies during the year, and then have their annual round up at the meetings of the A. M. A. There are all kinds of men at these meetings, and one class get so tired of the yearly résumé of the various astigmatic visions which the Code reformers believe they have had during the year, that they say, "for the sake of harmony, *for the sake of peace, for the* sake of what we came here for, give them what they think they want " This class of men are loyal to the profession, to the Code and to the A M A , but they are they who, because they have not much depth of earth (sand), when the heat comes, wither away, and the no codists have the aid of their votes

Another class, while not more loyal to the best interests of the profession, take *life*, easier, that is to say, stand grief better, and upon the final vote, good naturedly vote, "No," and then, as they should, dismiss the matter from their minds until some one of the reformers proceeds to remove the dressings from the imaginary sore, at the next session

This class of physicians appreciate the fact that the no codists are equally as scientific physicians as are those who uphold the Code They know too, that they themselves have hobbies, and that if fifty or a hundred of them could but unite upon one particular hobby, they could make life as much of a burden for the members of the ASSOCIATION as the no codists are doing and so they charitably accept the situation as being one of the afflictions to which humanity is incident, giving thanks that their own erratic ideas are of such a nature as to make a combination with any other hobby impossible There always have been no codists at the sessions of the A M A and the no codists emphatically assert that they are always going to be there, so it would seem that a meeting in which the Code question would have no place upon the program is past praying for, and really, to have the Code regularly scheduled as the subject for annual effervescence and defervesence is not the worst thing for the ASSOCIATION which can be thought of Beside, it follows by no means, that if the Code question were strictly debarred from discussion there would be no time spent over ASSOCIATION rules and laws of government because it is apparently the first thought of some men as soon as they become members of an organization, to look in the constitution and by laws for something to amend or strike out, and it is better and safer for the ASSOCIATION, as now, to have a definite, well understood subject the object of attack, than it would be to leave the undictated imagination to find a wrong whose victims would be crying to heaven for redress

Some probably are kept away from the meetings by what they feel to be an unbrotherly contention, or a waste of valuable time, but quite as many others, if it were known that the code question would not come before the session in any form, would stay *at home*, so that the effect upon the number of members in attendance is a stand off

The object in having a Chair of Ethics established in medical colleges is not that such a chair would in any way seek to interfere with the no codists' cherished right of the stated parade of their opinion, or in fact with anything else that they feel belongs to them, but the object is to inculcate the truths of the Code *on the minds of students of* medicine, precisely as the chair of anatomy builds up in the minds of students a knowledge of anatomy

The anatomy of osteopaths, christian scientists, and what nots, is a very different thing from anatomy as taught in medical colleges, and just so the no codists exhibit their skeleton of the code, which everybody except themselves knows is not the frame work of the Code of Medical Ethics at all The chair of anatomy does not bother with osteopaths, etc , neither would the chair of ethics need to trouble itself with the no codists If a medical student were, once or twice a week, for four years, to listen to a lecture upon the Code, he would be at his graduation a better physician, a better citizen, a better man, than he would be without the lectures There is abundant material about every medical college to illustrate the teachings of the Code, and with a copy of the Code in the hand of each student, the professors would become exemplars of the Code, not that they are not such now, but, in a wider and deeper sense it would be more manifestly and specifically the appropriate thing that "the teachers of such things ought themselves so to walk "

For the demonstration of the operations of the Code, the clinic itself would furnish many object lessons To most men the Code is a helpful looking glass By it many removable defects are made visible, and these defects removed in student life would save much mortification that would otherwise be inevitable in later years It costs something in temporary comfort, and in money also, to remove a blemish, but society as well as the afflicted one, in the end, is better off for the sacrifice

The Code, like all other beneficent provisions, squarely antagonizes selfishness There is a robustly modest denial of the existence of selfishness in any degree, in some sections of the East, but most men in their quiet moments can recall in some *of their acts the workings of that subtle* influence, and to such men the stimulation to greater carefulness, which the Code constantly begets, is an acknowledged help Selfishness is in a way, cunning Our own selfishness often deceives our very selves More often it is, indeed, that it blinds and deceives us than that others are fooled by it, hence it is that the easiest place to detect selfishness is in others In a chair of ethics is a hitherto unused power which is potent for good to the medical profession

What the condition of the profession would be to day, had such a chair always been in colleges, is a matter of guesswork, but because a chair of ethics never has existed is no reason why one should not be established

The desirableness of a better knowledge of what the Code teaches, so that there may be a better measuring up to its standards, must be the excuse for having taken so much of your space in trying to outline the theme

J F TRACY, M D

Congenital Absence of the Uterus and Anus, the Rectum Ending in the Vagina

PAWNEE CITY, NEB , Aug 10, 1898

To the Editor —After describing the more usual forms of malformations, Dr C A Kelsey,[1] says "In addition to these more common malformations there are various others The anus may open by an abnormal anus at any point in the perineal or sacral regions, or it may end in the bladder, urethra or vagina " Bearing on this subject I wish to report the following interesting case which came under my observation

Miss ——, age 23 years, small of stature, of good family history, has one older sister who menstruated quite young , has never menstruated About a year and a half ago she and her mother came to me with the following history when she was born, it was discovered that there was no anal orifice and she was given up to die by the physicians, but after a few days straining the nurse noticed that a small amount of meconium was escaping from the vulvar orifice This increased in quantity and she began to thrive, but had great trouble with her bowels until about ten years ago , had to use enemata or take salts to secure a passage For the past few years she has not been troubled in this way, but when the bowels are loose can not control the movements well and in consequence sometimes soils her linen When the bowels are not loose she has no trouble but must go on rather "short notice," sometimes She further stated that for the past few months, she had at irregular intervals, experienced vague pains in her back and abdomen, which she thought were caused by the menstrual molimen, hence the consultation On making a physical examination I noted the following A well formed girl, small of stature, weighing about one hundred pounds, mammæ well developed and perfectly formed, measurements with the pelvimeter showed the following dimensions Across spines of the ilium, twenty four centimeters, across from crest to crest, twenty five centimeters, bis trochanteric, thirty, conjugate (external), eighteen The pudendum was covered with a normal growth of hair The labia majora were hardly so full as the normal in one of her build The nymphæ and clitoris were well developed On separating the nymphæ, a normal urethral meatus presented The hymen was somewhat rudimentary but fairly well outlined and caruncular myrtiformes fairly well marked The vestibule and fourchette were normal In fact, the entire pudendum was normal

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[1] Reference Hand Book Vol 1 page 287

Extending from the fourchette posteriorly for about two centimeters and about one centimeter in breadth, was a band of delicate skin, very closely allied to mucous membrane From this back to the tip of the coccyx the appearance was that of a normal perineum, the skin containing the usual amount of pigment, but no signs of an effort at the formation of an anus The ostium vaginæ, in passing the finger, seemed quite normal, but after the examining finger had penetrated to the depth of two and a half or three centimeters, it came in contact with an annular constriction which was evidently the internal sphincter of the rectum When told to contract the sphincter, its grasp was quite perceptible, but nothing like the force of the normal muscle Just beyond this the finger came in contact with well moulded feces and quite a roomy rectum Bimanual palpation disclosed a narrow band running from one side of the pelvis to the other On the left side, a quite movable body could be felt, which appeared about half the size of a normal ovary This is undoubtedly a rudimentary ovary, as pressure on it causes that peculiar sensation complained of when the normal ovary is pressed On the right side, occupying the same relative position, was a small, firm body about one centimeter in diameter This was no doubt the rudimentary right ovary There was no evidence of a uterus, except the narrow band which crosses the pelvis, corresponding to the upper border of the broad ligament The bladder was normal in every respect, and a small speculum introduced showed the mucous membrane to resemble that of the rectum From the explanation of the father, who had consulted me relative to the case before the patient presented herself, I had expected to find an *anus vestibularis*

J W BULLARD, M D

A Leaf From an Old Book

HUDSON CENTER, N H, Aug 15, 1898

To the Editor —There has recently come into my possession a book the title of which reads as follows "Medicina Magica tamen Physica Magical but Natural Physick, or a Methodical Tractate of Diastatical Physick Containing the general Cures of all infirmities With a Description of a most excellent Cordial out of Gold much to be estimated

Published by Samuel Boulton Salop, London Printed by T C for N Brook at the Angel in Cornhill, 1665"

The book is inscribed to the "Marquess of Dorchester," by Samuel Boulton, under date of 1646

In these days of various "gold" treatments it may be of interest to become acquainted with methods employed 250 years ago To quote our author "Put foliated gold into a vessel well sealed with *Hermes* seal, put it into our fire till it be calcined to ashes, then sublime it into flores, having his *caput mortuum* or black *terra damnata* in the bottome, then let that which is sublimated be with the same degree of fire united to the same *caput mortuum* that it may be revived by it, so thall all may be reduced into an oyle which is called Oleum Solis the dose hereof is 2 or 3 grains, And out of this Mercury of *Sol* thou maiest also by the spirit of wine extract an high redness which will contain the cure of all diseases curable in nature, which is a true *aurum potabile*, and much to be estimated"

A most interesting feat of surgery is described as follows "A certain man of *Bruxels* being at *Bolognia* did in a fray lose his nose, and going to *Taylaicoza*, a Chyrurgeon living there, to consult how to have a new nose, and fearing the cutting a piece out of his own arm, he hired a porter for a good summe of money to have one cut out of his arm, which being done, and the cure performed, the man of Bruxels returned home"

This result appears to be eminently satisfactory and worthy of being ranked with the achievements of modern surgery, but note the after history of the case

"About 13 months after, he felt his nose suddenly grow cold, and within a few days after it rotted and fell quite off, And he with many others, wondring at the strange chance, enquiring of the cause, it was found that just at the same instant that the nose grew cold, the Porter at *Bolognia* died, the truth whereof, as Helmont writes, many at *Bruxels* will testifie"

Our author shows true courage and approximates the modern standpoint in combating the then prevalent belief in the almost universal efficacy of blood letting

"Some say many have amended upon letting blood I deny it not, but that was not the cause of the recovery, but natural heat, stirred up, set upon and conquered the disease, which heat might have been better stirred up, especially by Purgation at the beginning when there was strength, by which means also the cause of the disease being partly taken away, the part is much relieved Thus you see the madness of them that are so forward upon every occasion, time, and age, to let blood, whereon, how many dangers follow, I appeal to Experience And this is the true cause why Feavers are so seldome cured I would physicians would follow nature, and leave off one to swear himself a slave to *Galen*, another to *Avicen*, a third to *Paracelsus* These men were great, but when they strove to defend their owne Opinions, they often erred"

Let us allow our author to display his knowledge of physiology, by quoting his description of the urine Urine is an Excrement of the second Concoction, done in the Liver, or rather in the Veines, from whence by the emulgent veins it is sent to the reins, yet mixt with blood, out of which by the Uriters it is as it were percolated and strained and so sent to the bladder, where also it abideth a while, and then is by its passage cast out, Hence it appears that the urine hath a great communion with most part of the body, for it hath great affinity with the Liver, Reins, and Bladder, for by these parts it passeth."

Perhaps the most interesting passage in the book is the description of the wonderful weapon salve compounded of brain tissue, Egyptain mummy, etc, mixed only when the auspices of the moon and planets are favorable, and applied daily, not to the wounded part but to the weapon with which the wound was inflicted

HENRY O SMITH, M D

Normal Salt Solution

CHICAGO, Aug 17, 1898

To the Editor —Have just been reading the really valuable article, "Saline Infusions" (*vide* JOURNAL, August 6, p 306), and its suggestions will doubtless have great weight with many practitioners In view of that fact, I thought it might be well to call attention to a typographic error in the fourth line from the top of page 307, where it directs a 6 per cent salt solution when it should say 6 per cent. More especially did I think it necessary, since I saw no correction in last week's number Life saving measures ought to be well known, and this certainly is one

Truly yours,

C H MILLER, M D

Of course our correspondent noticed what was so obvious that the necessary punctuation mark in front of the figure six (6) was omitted, and its absence escaped the attention of the proof reader But the formula was correctly stated in the preceding column of the same article, as a drachm to the pint According to Foster ("Text book of Physiol ") 0 6 per cent is a normal solution Howell ("Am Text-book of Physiology," p 362) states 0 9 per cent. is the "physiologic salt solution " Foster's Dictionary states that a solution of ½ to ¾ per cent. causes little or no change in animal tissues with which it comes in contact, and hence is called "indifferent" (or *normal or physiologic* salt solution), and is used in physiologic experiments and microscopy whenever it is desired to keep the tissues as nearly normal as possible (Wood, "Ref Handbook") Normal salt solution, gm 15 to 2 liters

Ethics as Practiced

Conshohocken, Pa , Aug 15, 1898

To the Editor —It seems to me that this letter is a good text for an editorial on "Medical Ethics " Is this the ethics recognized by the New York profession and recommended by a teacher in a medical college, even though a subordinate?

Respectfully, Geo M Stiles

Brooklyn, July 7, 1898

To whom it may concern —This is to certify that I am acquainted with the methods of the International Fidelity Rupture Cure Co , and am satisfied that it is a work which any doctor, whom this Co may consider competent and reliable, can take up in connection with his regular practice, with great advantage to himself, and at the same time keep within the bounds of Professional Ethics Yours respectfully,

Herbert A Russell, M D ,
Demonstrator of Anatomy at Long Island College Hospital

P S —The above is a verbatim letter from Dr Russell, who is using this treatment in connection with his practice

New York, Aug 13, 1898

G M Stiles, M.D , Conshohocken, Pa

Dear Doctor —We have a positive cure for all forms of hernia that can be retained with a support, and can demonstrate the truth of our assertions to your complete satisfaction With the great number of people afflicted with hernia—at least one in every ten—here is a field that is practically unoccupied, and from which large fees are obtained We receive from $100 to $500 for a guaranteed cure in adults Children are cured for less

You can use this treatment in connection with your practice and make from $3000 to $8000 per year, or, if you prefer to make a specialty of it, as many do, the income ranges from $6000 to $15,000 per year, and only a few hours each day are devoted to the work

The pay is certain and prompt, and all the disagreeable features of a general practice are eliminated

This treatment is strictly ethical, for there is nothing secret about it To each physician engaging in the work, every part of it is explained explicitly

If you are interested in this, and will write to us by return mail, we will give you all the information at our command, and will, if you desire, call upon you personally and explain to you our method of starting you in the business Respectfully yours, International Fidelity Rupture Cure Co ,

Per B H Temple

Remarks of Dr Egan at Detroit Conference

Springfield, Ill., Aug 19, 1898

To the Editor —As my reply to the question asked at the recent Conference of States and Provincial Boards of Health at Detroit, relative to the principal line of work of the Illinois State Board of Health, is incorrectly reported in the Journal of the 20th inst , I will ask you to kindly print my remarks in full, a copy of which accompanies this Very truly yours,

J A Egan, Sec Ill State Board of Health

Dr J A Egan—I regret to state that the principal line of work of the Illinois State Board of Health is in connection with the enforcement of the Medical Practice Act, the duties pertaining to which have so increased during the past few years that the Board has really become one of registration and examination It is earnestly hoped that before this Conference, again meets the law will be so changed that the Board will have an opportunity to perform its legitimate functions Notwithstanding, that for years the Board has recommended the enactment of a law creating a State Board of Medical Examiners, to examine and license physicians and midwives, all efforts to obtain the desired legislation have been futile There are, however, excellent reasons for believing that relief will be obtained during the coming year As an illustration of the duties devolving on the Board incidental to the Act referred to, I will state that during the past year the Board has issued licenses to 875 physicians on presentation of diplomas and has examined 35 physicians whose diplomas are not accorded recognition Fifty non graduates in medicine and seventy five midwives were also examined During the same period the Secretary answered 11,473 communications, and the Board instituted prosecutions against 94 violators of the Medical Practice Act and took steps whereby 100 more were compelled to desist from practice The above represents only a part of the duties occasioned by the Act Aside from the maintenance of an efficient inspection and quarantine service at Cairo and other points in the southern portion of the State from September 7, the date on which yellow fever was announced as existing in New Orleans, to November 7, when the disease was entirely stamped out in Memphis, 100 miles south, very little outside of the ordinary routine work has been done by the Board in the line of sanitary investigation during the year Whenever it has been found necessary or desirable, local boards of health have been assisted in the conduct of sanitary measures All epidemic outbreaks throughout the State have been promptly investigated, and wherever no local boards of health existed efforts have been made to have such established The sanitary condition of several of the State Institutions have been inspected, and in connection with the University of the State, analyses of the water supplies of the State have been made Owing to a decision of the supreme court of the State adverse to the Board, no attempt has been made to enforce the school vaccination order, and on account of defects in the law creating the Board, it has been found impracticable to obtain any system of vital statistics The existing conditions can be little bettered until legislation is obtained The creation of a State Board of Medical Examiners is absolutely imperative, and sanitation would be much better promoted were laws also enacted establishing local boards of health, making the appointment mandatory, not optional as at present There are several cities in the State, the populations of which run from 1000 to 10,000, which at present have no local boards of health

PUBLIC HEALTH

Bubonic Plague again Epidemic —Press reports of August 17 quote official reports from Bombay, of the preceding week, as summing a total of 103 deaths (*vide* Journal, Aug 20, p 429)

San Juan Board of Health —General Miles has organized a board of health in San Juan, and when they are generally organized and are doing their good work all over Cuba, Porto Rico and the Philippines, the day of filth diseases and the deadly reign of General Bacillus will begin to be numbered

A Coming Report on Typhoid Fever —A Washington dispatch of August 17 states that Surgeon General Sternberg has appointed a Commission to inquire into the cause and prevention of typhoid fever in camps The commission will consist of Major Walter Reed, U S A , Major Victor C Vaughn, division surgeon of volunteers, of the University of Michigan, and Major Edward O Shakespeare, brigade surgeon, U S V No more competent commission could have been selected

New State Health Officer —The Governor has named Walter Frazer Blunt, M D , of Galveston, Texas, as State Health Officer to succeed the late Dr Swearingen In 1878 Dr Blunt was appointed as State quarantine officer, and held the position for many years, first under State Health Officer Swearingen, then under Dr Rutherford, and again under Dr Swearingen He resigned the position about eighteen months ago, being in ill health During the quarantine troubles last fall he assisted Dr Swearingen, and while Dr Swearingen was so ill Dr Blunt was called to Austin to take charge of the Health De

A New Focus of Endemic Bubonic Plague has been unearthed by R Koch in the course of his travels in Africa It is at Kiziba, on Lake Victoria Nyanza, and has hitherto been restricted to this locality, but there is danger of its spreading on the completion of the railroad now being built by the English to connect the lake with the Indian Ocean The natives live almost exclusively on bananas, which they plant in groves so dense that no light nor air can penetrate, and these groves swarm with rats Koch considers that effective measures will, in time, eradicate this disease, which is primarily a rat disease

The Paris Sewage Park —The luxuriance of the vegetation on these fields is remarkable all kinds of vegetables, medicinal plants, etc., thrive to perfection, irrigated with water from the Paris sewers, which is so purified in its course that it emerges from the "park" limpid and pure, as visitors taste and exclaim There is no perceptible odor except in the midst of a net work of the irrigating canals, and a few steps beyond it is impossible to distinguish it All fear of contaminating the atmosphere of the vicinity has proved groundless The number of bacteria is reduced to approximate spring water, and the authorities claim that the infection of the Seine will diminish with increased areas appropriated for sewage parks, until it will cease altogether when all the sewer water from the city shall be spread out thus on the fields The amount thus far utilized is 20,653 cubic meters to the hectare, there are 795 hectares devoted to the purpose

Research Laboratories at London —The new government laboratories in Clement's Inn are found to be a great convenience No fewer than thirty eight rooms, specially constructed and fitted with perfect appliances, are at the disposal of the staff It appears that in 1867 the number of samples examined and reported upon was 9,055, in 1877, 14,024, in 1887, 39,244, and in the twelve months ended March of the present year, 64,664, of these, 28,875 were samples of beer and brewing material, 11,403 spirits, 14,872 snuff and tobacco, 41 coffee, 6,423 miscellaneous articles, and the standardization of excise instruments and 3,050 specimens of the contract supplies of government departments The principal laboratory is specially adapted for the examination of beer and spirits A set of rooms are used for the analysis of crown contract samples and of food and drugs as well as tobacco The new building was constructed by the Board of Works at a cost of between £25,000 and £30,000

Sanitary Workers Should be Divorced from Politics —The Secretary of the State Board of Health was re elected for the fourteenth time, which is a highly appreciated compliment. He also, with the next issue of the *Bulletin*, will enter upon his twelfth consecutive year as editor thereof This honor is not unusual, but is rather a practical exemplification of civil service principles So far as we know, Dr Pelletier, Province of Quebec, Dr Bryce, Province of Ontario, Dr Young of Maine, Dr Watson of New Hampshire Dr Lindsley of Connecticut, Dr Abbott of Massachusetts, Dr Frazer of Delaware, Dr Porter of Florida, Dr McCormack of Kentucky, Dr Laine of California, Dr Jennings of Arkansas, Dr Sewell of Colorado, Dr Baker of Michigan, Dr Johnson of Mississippi, Dr Probst of Ohio, Dr Swearingen of Texas and Dr Lee of Pennsylvania have been the secretaries of their respective provinces and states since their State Boards of Health were organized There were others, as Dr Metcalf of Indiana, Dr J Berrien of Tennessee and Dr Cochran of Alabama, who maintained like relations to their respective states until death terminated their services The position is one that by common consent seems to be, and should be, awarded independent of politics, religion, or on purely personal grounds —*Iowa Health Bulletin*

Smallpox Prevalence in North Carolina —The *Bulletin* of the State Board of Health of that State for July reports a material spread of variola, both as to increase of cases and of localities infected About the middle of July there was known to be four infected points in Iredell County, also at Asheville, 1 case, which is nearly well, Catawba, 6 cases in one family in the southeastern part of the county, Cleveland, in Rowan County, 7, Reidsville, 1, Durham, 1 When the superintendent of Rowan County was first notified of the existence of smallpox at Cleveland he found 20 cases, 13 of whom had recovered They had been diagnosticated as chicken pox, urticaria and pemphigus, and no precautions whatever were taken in consequence The people, we are told, called it "elephant itch," not a bad name, as the eruption of smallpox is about the biggest thing of its class A negro from Cleveland went to Reidsville and was there two days with an eruption of smallpox on him before he was discovered During that time he went on an excursion and mingled promiscuously with his people One of these who had been exposed went from Reidsville to Durham in the beginning of the eruption stage Although sought for he was not found until next morning, after he had slept in the same room with several others Reports from Asheville, Iredell County, generally, Cleveland and Durham, show everything in good shape except the reluctance in too many instances of the people to be vaccinated The reports, however, from Catawba County and Reidsville are not at all satisfactory, and we fear a spread of the disease in these localities

Relations and Conditions of the Soil to the Spread of Disease —Dr W H Welch has shown that the possibilities of infection from soil contaminated with disease germs are numerous, and often intricate The list of diseases whose causation has been shown to stand under conditions in more or less direct relation to contamination of the ground with their specific germs is a long one Among the more important may be mentioned malaria, typhoid fever, cholera, yellow fever, dysentery, tuberculosis and the summer diarrhea of infants Experience teaches, unmistakably, that contamination of the soil with organic refuse favors the development and spread of such diseases as these, and that the drainage and purification of the soil by proper systems of sewerage are among the most effective measures for their prevention No more instructive illustration of the value of modern methods of public sanitation can be found than the inability of Asiatic cholera to secure a foothold during the last two European epidemics in clean cities, with proper sewerage and water supply, and its ravages in notoriously filthy or insanitary cities, such as Toulon, Marseilles, Naples, and formerly Hamburg, Authorities have differed as to the relative value of sewerage and of water supply in influencing the prevalence of typhoid fever We need not pause here to discuss the matter Both factors are important, the drinking water usually the more important. But it is sufficient for our purpose to show that purification of the ground by proper disposal of sewage is not one of the factors in determining a reduction in the occurrence of typhoid fever and other diseases It is by no means an easy matter in all cases to assign to each one of the various recognized elements which go to make up an entire system of satisfactory municipal sanitation its due share in the beneficial result, for it rarely happens that one is introduced by itself alone, and the harmonious working of the whole system is often necessary to secure the best results from the individual factors, such as pure water supply efficient sewerage, good drainage, cleanliness of streets, improvement or removal of insanitary quarters, thorough sanitary inspection of dairies and food stuffs, public disinfecting establishments, hospital for infectious diseases, municipal laboratories, etc. In some instances, however, the conditions have been such as to furnish conclusive demonstration of the separate influence of the introduction of effective sewerage upon the death rate from typhoid fever —*The Sanitary Record*

SOCIETY NEWS

American Microscopical Society —The twenty first annual meeting of this Society will be held in Syracuse, N Y , Aug 30, 31, and Sept 1, 1898 Tuesday, August 30, 10 A M , will occur the addresses of welcome, followed by the reading and discussion of papers On the evening of Tuesday will occur the annual address by the acting president Prof V A Moore of Cornell University Wednesday afternoon there will be given demonstrations of the projection microscope and of laboratory apparatus, and in the evening will occur the soirée Thursday afternoon the Society will be shown much of interest in the New York State Institution for Feeble Minded Children The Vanderbilt Hotel will be headquarters, with a special rate of $2 per day A small dining room, known as the "ordinary," will be reserved for the exclusive use of members Owing to the State Fair, held in Syracuse from August 29 to September 3, a round trip ticket from any station in New York State may be purchased for half the usual rate and 50 cents (which entitles the holder to one visit at the Fair) All interested persons are invited to be present, join the Society and read and discuss papers or demonstrate apparatus and methods For particulars as to membership, etc , letters may be addressed to Prof S H Gage, Ithaca, N Y , or Dr A C Mercer, Syracuse, N Y

The Fourth International Congress for the Study of Tuberculosis in Man and Animal, held in Paris, France, July 27 to August 2, concluded its sessions by adopting the following resolutions

1 While awaiting the time when tuberculosis shall be included among the contagious diseases requiring official notification, all public places should be provided with hygienic cuspidors and placards warning against their disregard

2 Public authorities everywhere are urged to set the example by installing hygienic cuspidors in all places under their jurisdiction, especially—and this is the most important feature of the reform in schools of all kinds

3 Protesting against the admittance of tuberculous patients to institutions for convalescents open to patients with other diseases

4 Urging the establishment of public free sanatoria and asylums for convalescent children

5 Endorsing the founding of as large a number of small sanatoria as possible by private initiative on the part of physicians and also by the public.

6 Recommending periodic international reunions for the further study of tuberculosis and especially of its prophylaxis

7 Endorsing the courses in hygiene recently inaugurated by the Antituberculosis League in Paris and urging their adoption elsewhere

8 Requesting the authorities to investigate means to prevent the use of fraudulent tuberculin for the purpose of concealing the existence of tuberculosis in animals destined for export

The Congress also proclaimed the urgent necessity of legislative measures requiring 1 The separation of diseased from healthy animals 2 The sale of diseased animals for any purpose except for slaughtering 3 The constant surveillance of dairies and the immediate slaughter of every animal affected with tubercular mammitis 4 The sterilization, or at least the pasteurization, of all milk used in the manufacture of butter or cheese on a large scale 5 The universal adoption of a service of meat inspection on lines similar to those followed in Belgium the last few years The Congress also passed a vote of thanks in recognition of the active support rendered the League in the prophylaxis of tuberculosis by the presidents of the French universities

San Francisco County Medical Society —The regular monthly meeting held August 2, was devoted to a discussion of "Cancer of the Stomach " Dr Philip King Brown treated of the pathology, Dr William Fitch Cheny the diagnosis and Dr Emmet Rixford discussed the treatment, confining his remarks entirely to the surgical treatment, practically the only aspect of the subject Dr Brown said that while scirrhus was the most common form and adenocarcinoma the next most frequent variety met with, but little attention had been given to the form of pigment celled carcinoma which, though not at all common, still was met with occasionally and was deserving of more notice than generally given it by writers He gave a careful résumé of the facts known as to the macro and microscopic appearances of the various forms of cancer in this location Dr Cheney, in discussing the diagnosis, referred to the tabulated, though unpublished, results of an examination of 150 cases in which the disease was found 20 times to have appeared in a subject under 30 years (between 20 and 30), and 17 times between the ages of 30 and 40, these cases seem to somewhat controvert the accepted idea that the disease is very rare under the age of 30 years Of these 150 cases, 11 gave a family history of cancer, showing that while the factor of heredity may be exaggerated in many instances, it is certainly an element to be considered In no instance in this series of cases could it be ascertained that injury played any part as a causative factor The symptom complained of as the most aggravating and prominent, in this same series of 150 cases, shows pain to take the first place, being noticed in 130, vomiting was complained of in 128, while a tumor had been noticed by the patient or was at once perceptible in 115 cases Only 36 cases had vomited blood, indicating that this factor is not so common as generally supposed Dyspepsia has been noticed and was aggravated in 38 cases Pallor, loss of flesh and the cachexia should lead, if combined with any one of these symptoms, to a careful examination of the abdomen, the possibility of cancer being suspected On examination, the abdomen should be carefully inspected, for it was found in 76 of the 150 cases that on careful examination, or rather on simple inspection, a tumor could be more or less well discerned, it may be that the tumor does not appear at first glance, but as the abdomen is longer inspected the shadowy outline will become evident Simple inspection will very often reveal an abnormal pulsation of the abdominal aorta The fact was accentuated that the tumor may be at the pylorus and yet be found in almost any part of the abdomen, for the reason that there is so often enlargement of the stomach, thus allowing the tumor to sag down or to assume a location quite other than would perhaps be expected, because the tumor is found at some point other that the true pyloric location, is not any evidence that it is not a tumor of the pylorus The value of the abnormally increased peristaltic wave was pointed out, as showing the presence of an increased muscular action, or an unusual development of the muscular coats of the stomach contents through the lessened lumen of the pyloric orifice This peristaltic wave may be stimulated by striking the abdomen with a wet towel, or by rather rough percussion Inflation of the stomach, either by means of bicarbonate of soda and tartaric acid, or by gas direct should always be resorted to, by this means we may clearly ascertain the presence of other tumors of metastatic origin The proceeding of inflation is perfectly safe, in the doctor's opinion, and has nothing to discourage its use On palpating the abdomen it may occur, and in fact does often occur, that the tumor will be outlined one day, and perhaps not the next, this should not be regarded as an unfavorable factor in the diagnosis, for many circumstances may prevent the discovery of a tumor on any particular occasion, if it be found once it will be found again if persistent effort is made The chemic examination of the stomach contents and test meal, though it should always be undertaken, is not so fruitful of good results as could be desired It should be accepted only as one link in the chain of evidence Tissue fragments, too, do not always throw much light on the true condition, for the arrangement of the cells has a great deal to do with the diagnosis from this standpoint, and the cells derived from washings are almost always much broken up and disarranged If a portion of cancerous growth can be obtained, of course the diagnosis presents no further difficulties The matter of the differential diagnosis was brought out very forcibly and the many points to be considered were carefully outlined Dr Rixford, in dealing with the question of treatment had prepared a careful list of the various operations in chronologic order, that had been advanced and tried for relieving the condition of cancer of the stomach In speaking of the difference in the percentage of mortality between the first operations and those of the present day in pylorectomy, the point was emphasized that early operation is of vital importance and has had as much as any one thing to do with the decreased mortality It was very difficult to gain the consent of any patient at first for the operation Dr Rixford called attention to the reports at the late congress at Moscow, when the returns from a large number of operators were given, pylorectomy resulted in a mortality of 37 0 per cent., while the palliative operation of gastro enterostomy exhibited a mortality of but 25 per cent Very few of the cases operated on have lived for more than two years, it is largely on this account that the majority of the English surgeons are not disposed to favor operative interference in cancer of the stomach As for gastrectomy, the Doctor was of the opinion that the operation was too young to express any opinion as to its usefulness, but he was rather inclined to look upon it as an operation with a very limited field, and one that, after a while, would be seldom done The subject was discussed at considerable length by Drs J Henry Barbat, F B Carpenter, Dudley Tait and others

NECROLOGY

FOSTER PRATT, M D, of Kalamazoo, Mich, died August 12 of angina pectoris, while seated in his library at his home with the evening paper in his hand He had a severe attack of a similar character on August 7, while visiting relatives in a neighboring city, from which he had not completely rallied, although he had been able to be out, and two days before his death was actively engaged in attending to his professional duties Death came peacefully and without warning as he sat in the company of his wife Dr Pratt was born in Mt Morris, N Y, Jan 9, 1823 He spent his boyhood days in New York, completing a course in the Franklin Academy and later became principal of the Angelica Academy, which position he held until compelled to give it up on account of sickness In 1844 he went to West Virginia to take charge of a private school in Hampshire County He there married Miss Mary L Gamble, studied medicine with Dr A J Sangster and later went to Philadelphia and was graduated from the University of Pennsylvania in 1849 He practiced in Virginia until 1856, when he came to Kalamazoo, where he has since continuously resided He early established a large practice, but gave it up to accept a position as surgeon of the 13th Michigan Volunteer Regiment His regiment participated in the battles of Pittsburg Landing in 1862, the engagements of Stone River, Chickamauga, Chattanooga, Lookout Mountain, Missionary Ridge and Sherman's march to the sea In 1891 he was made president of the village of Kalamazoo and at numerous other times he has been placed in official capacities To him the city is largely indebted for its present system of sewerage which was established while he was one of the Commissioners of Sewers He also took a very important part and active interest in providing the city with its water supply He has been a member of the AMERICAN MEDICAL ASSOCIATION for twenty years and has been a member of its judicial council He was an honorary member of the American Medico Psychologic Association, was twice president of the local Medical Society, once vice president and acting president of the State Medical Society and once its president by election His contributions to literary papers and medical journals were highly valued In 1882 he wrote a comprehensive review of that portion of the tenth census relating to criminals, paupers, insane, idiots, the blind, the deaf and dumb He strongly advocated the idea of the restriction of indiscriminate immigration to the United States of objectionable persons or those having a tendency to produce criminals and dependents He had decided literary tastes and was quite a politician He was district delegate to the National Democratic Convention at New York in 1868, at Baltimore in 1872 and a delegate at large at Cincinnati in 1880 In his early days he was a political speaker and a fine orator He was prominent in Masonry, and while secretary of the Grand Lodge, he wrote the present code of Masonic Laws for the Michigan Jurisdiction In 1858 Dr Pratt was elected to the Legislature, and at the session of 1859 secured by zealous and hard work the first appropriation of any magnitude for the Michigan Asylum for the Insane at Kalamazoo From that time on he was a staunch and steadfast friend and worker for the asylum When Dr E H VanDeusen, its former superintendent, was sued for false imprisonment for detaining a patient in whose commitment papers there was some slight irregularity, Dr Pratt was the earnest and helpful adviser of the asylum and, largely by reason of his suggestions and directions, the asylum was victorious in a very tedious lawsuit. In 1882 Dr Pratt became a member of the Board of Trustees of the asylum, which position he occupied for twelve years, being president of the Board for four years Since 1887 he has been a member of the local Pension Examining Board Dr Pratt was a man respected by all who knew him, a man of high and honorable aims and virtues, one whose faults were few and small As a citizen and a friend he is held in tender remembrance by all who knew him

WILLIAM CARTER OTTERSON, M D, College of Physicians and Surgeons, N Y, 1853, died at his summer home in Long Branch, N J, August 17 He was a son of Rev James Otterson and was born in Roslyn, Long Island, Sept 17, 1828 During the Civil War he served as surgeon U S V from Dec 24, 1861, to May 25, 1864 Five years ago he gave up the duties of his profession in consequence of paralysis of the right side, after having practiced twenty five years in Brooklyn, N Y, at one address Two sons and a daughter are his survivors

OWEN J WARD, M D, N Y University Medical College, 1865, died at his home in New York city August 17, aged 58 years He served on the visiting staff of the Gouverneur St Hospital from the date of its establishment until his death

W J CANNON, M.D, Lambert, Tenn, August 14 ——George E Catlin, M D, Lake Geneva, Wis, aged 58 years ——Harlow P Gamwell, M.D, Westfield, Mass, August 12, aged 74 years ——Edwin Gibbs, M.D, Washington, D C, August 15, at Lynnwood, Va ——Benjamin F Wright, M D, Youngs, Ga, August 10

MISCELLANY

An Advance in Therapeutics —A New York physician, of course in an absent-minded way, prescribed protocol, grs x, as the latest anodyne He had been reading the war news

A Prohibitive Tax —Prof Enrico Bottini, an Italian surgeon, announces in a public card his retirement from practice because "he was oppressed by the weight of the income tax imposed and was no longer able to meet it"

Antistreptococcin.—Marmorek's new antitoxin for the streptococcus pyogenes is proving successful in the tests at the Paris hospitals in septic wound and puerperal fevers, blood poisoning and other diseases caused by this streptococcus, and also in the complications of diphtheria, against which the Behring antitoxin is powerless —*St Petersb Med Woch*, July 11

Patent on Antitoxin —Concerning the recent patent granted Prof Behring, on antitoxin, Messrs Parke, Davis & Co of Detroit announce that they will protect and defend purchasers from any legal proceedings brought as a result of their purchase, sale, and use of their serum, having retained the services of Messrs Betts, Betts, Sheffield & Betts, of New York City, patent lawyers, to fight the monopoly on antitoxin

Ohio Medical College —The *Times Star*, Cincinnati, August 15, says "They apologize—The AMERICAN MEDICAL ASSOCIATION has apologized to the Ohio Medical College for ousting them from the ASSOCIATION a year ago" This item only shows the ignorance of the *Star* in confounding the AMERICAN MEDICAL ASSOCIATIO with the Association of American Medical Colleges, an entirely separate body

The St Louis Eye, Ear, Nose and Throat Hospital —This hospital, located at 500 N Jefferson Avenue, was opened to the public, April 1, 1898 The Eye Department is in charge of Dr J Ellis Jennings, and the Ear, Nose and Throat Department in charge of Dr Leo Caplan The ground floor is en tirely devoted to the out door department, and is open to the poor from 2 to 4 P M daily, except Sunday Care is taken to exclude from free treatment persons able to pay for professional services The institution will be incorporated and have the privilege of giving post graduate courses in diseases of the eye, ear, nose and throat, and of issuing certificates or diplomas to those who have taken the courses

Nervous Phenomena in Children —Willits (*Phil Med Jour* for August 6) says that a perfectly healthy infant should sleep twenty of the twenty four hours He condemns the practice of suddenly waking a babe from a sound sleep, so often done for visitors to talk and play with it, as this excitation falls directly on the nervous system and is an important factor in producing nervousness Startling noises of any sort, as street noises, loud striking clocks, bells, etc , are to be avoided

Subclavian Aneurysm —Moynihan (*Annals of Surgery* for July) discusses the treatment by both excision of the sac and the use of the distal ligature He advocates the former method and claims for it a far greater chance of recovery, no risk of recurrence, less risk of gangrene, and a probable complete recovery from any affections due to nerve interference He gives statistics concerning the mortality, gangrene and recurrence after operation in both of these methods, recurrence after operation being noted in 5 per cent. of the cases after ligature

Medico Legal Surgery —The September number of the *Medico Legal Journal* will contain an article on "The Progress of Medico Legal Surgery," by the editor, Clark Bell, advance sheets of which have been sent to the JOURNAL It gives a sketch of the organization of the Army and Navy Medical Corps and a full account of railway surgery in the United States and of its societies and associations, including the Section of Medico Legal Surgery of the Medico Legal Society, which is largely a body of railway surgeons The article gives, briefly, a statement of the advances in surgery since the Civil War, and a series of letters from eminent surgeons with their opinions in regard to this subject, and would be a useful one for reference as to questions of military, navy and especially railway medical organizations in this country

Thyroid Medication is generally considered injurious in exophthalmic goiter, but O Martin urges all to cautiously try it in this disease before resorting to severer measures, as he has witnessed a number of severe typic cases permanently cured with this alone He describes one of them in the *Presse Méd* of July 13, nothing left but a slight tremor after four months of 40 to 20 centigrams a day of the dessicated thyroid extract. It has also proved effective in chlorosis Capitan relates a number of cases which had resisted iron and tonics, but yielded at last to thyroid medication, indicating a thyroid origin for certain forms of this disease

Township Trustee can not Bind County to Pay —Section 6718 of Burns' Revised Statutes of Indiana of 1894, provides that the board of commissioners of each county shall constitute a board of health ex officio for the county, whose duty it shall be to protect the public health, by removal of all causes of diseases when known, and in all cases to take prompt action to arrest the spread of contagious diseases, etc But the appellate court of Indiana holds, in the case of Board of Commissioners of Perry County vs Bader, June, 1898, that a claim for services as watchman during time of quarantine against smallpox, rendered by order of the township trustee, can not be collected from the county, through the board of commissioners, it showing no liability upon the part of the county

An Ancient Hospital —At Baden, near Zurich, Switzerland, in connection with recent excavations at Windisch, the Roman Vindonissa, an ancient military hospital has been discovered It has fourteen rooms, which appear to have been well supplied with medical, surgical and pharmaceutic apparatus, including probes, tubes, forceps, cauterizing implements, and even safety pins, medicine spoons of bone, silver measuring vessels, jars and pots for ointments, etc Some coins were also found, those of silver being of the reign of Vespasian and Hadrian, those of copper bearing the effigy of Cladius, Nero and Domitian At Vindonissa, two great Roman military roads meet, one leading from the great St Bernard along Lake Leman and then by Aventicum and Vindonissa to the Roman stations on the Rhine, the other from Italy to Lake Constance by the Rhaetian Alps, the present canton of Winterthur, Baden and Windisch This last point was the station of the seventh and eighth legions —*Scientific American*, Aug 13

A Skeptic in Georgia —We once heard a very eminent and scholarly Bishop say that, in his experience, some learned men were the greatest fools We do not care to apply this harshly to Prof Koch, but will mildly suggest that he is out of his reckoning Prof Koch of antituberculosis fame has made a new discovery He has come forward with the startling announcement that he knows what causes mosquitoes? It's mosquitoes He might just as well have included sandflies, gnats, and bedbugs The *New York Times* cleverly turns the tables upon the professor It says "Now, Prof Koch may be a very great man, but he has simply begged the question If mosquitoes cause malaria, what causes mosquitoes? That's what this patient world wishes to know Tell us how to get rid of the mosquitoes, and we shall not worry about the malaria " The presumed origin of the mosquitoes is water, yet Dr Koch insists that malaria is not water borne The facts are against him, but just now he has his mosquito theory in full blast —*Augusta Chronicle*

Gynecologic Surgery of the Insane —Hobbs (*Am Jour of Obstet* for August), in a paper on "Surgical Treatment of Patients at the Asylum for Insane," London, Ont., says that "the work in gynecologic lines shows that perhaps one sixth, if not one fourth, of all the women in asylums for the insane are there because of the special infirmities of their sex " Of 136 women, 126—17 per cent. of the female inmates—had organic lesions or malformations incompatible with normal genitalia Of the 126, the condition of 121 necessitated operative measures for the amelioration of physical disorders which either caused or complicated disturbance of the nerve centers The impossibility of obtaining reliable data from the insane as to the origin of the ill-health made actual examination necessary, and always under anesthesia, ether being used, and, in these patients, being rapidly recovered from and rarely causing nausea or vomiting

Speech Defects.—Scheppegrell (*New Orleans Med and Surg Jour* for August) writes on the etiology and treatment of stuttering, stammering, etc , and groups the forms of speech defects in two classes paralalia and dyslalia, the former referring to defective speech, lisping, etc , and the latter to difficult or spasmodic speech, as stammering and stuttering He considers prophylaxis of the utmost importance, and believes the inclination of mothers to teach their children "baby talk" can not be too severely condemned, as they become so accustomed to this method of speech as to make it difficult to change it He points out that girls suffer less from the more severe forms of speech defects than boys, and some authors have even doubted the existence of female stutterers, while Cöen, of Vienna, places the number at only 1.5 per cent of the whole number affected He says that children should not be allowed to associate with stammerers, as the children may not only be influenced but there is also a tendency to aggravate the defect in the case of the stammerer

Exhibition of Rupture to Jury.—In the personal injury case of what is now styled the Chicago & Alton Railroad Company vs Clausen, in which the supreme court of Illinois affirmed a judg ment against the railroad company, and denied a rehearing, June 10, 1898, it was complained that the trial court had improperly permitted the plaintiff below to exhibit to the jury a rupture alleged to have been caused by the accident set forth in the case This leads the supreme court to sav that it is primarily within the discretion of the trial court to permit an injury to be shown to the jury for any legitimate and proper purpose that will aid in the determination of the issue, and that, while it is questionable whether the exhibition referred to was proper, inasmuch as the existence of the rupture, and the nature and extent of it, were not controverted by the defendant, and it is questionable whether its only effect would not be to excite feeling, rather than to aid in settling any disputed question, the court does not feel prepared to say that such was the case, or that there was a clear abuse of the discretion confided to the trial court

A Medical Relief Yacht.—Mr Alexander Van Rensselaer's yacht *May*, the services of which were tendered the United States Government by the owner, sailed August 5, for Porto Rico It has aboard the four special commissioners appointed by the National Relief Association Hon William Potter, ex Minister to Italy, chairman, Mr Alexander Van Rensselaer, Mr Louis C Vanuxem and Dr G G Groff The yacht will carry supplies for the soldiers, which, by order of Surgeon General Sternberg, will be placed at the disposal of Colonel Greenleaf, Chief Surgeon of the troops under General Miles' command Having discharged the supplies, the yacht will carry to the United States any sick or wounded soldiers or sailors that may be awaiting transportation —(*Phila Med Journal*, August 6) [The press dispatches of August 20 noted the arrival of the vessel at Ponce Mrs Van Rensselaer was slightly injured by a stumbling horse while riding from Ponce to the military camp]

New Medical Faculty—The faculty of the Baltimore Medical University, which had been depleted by the resignation of a number of its members, has been reorganized with the following roster Jas G Linthicum, emeritus professor of principles and practice of medicine Hampson H Biedler, principles and practice of surgery and clinical surgery Wm A B Sellman, diseases of women and children J W C Cuddy, theory and practice of medicine and clinical medicine E Reid, diseases of the nervous system and diseases of the throat and chest Frederick C Jewett, physiology and hygiene Theodore Cook, Jr , diseases of the eye and ear A G Barret, toxicology and chemistry Z K Wiley, anatomy and pathology C Urban Smith, materia medica and therapeutics and clinical professor of diseases of the stomach The adjunct faculty is H J Hankel demonstrator of anatomy Howard Bryant, lecturer on medical jurisprudence Shelton Law, lecturer on minor surgery and bandaging S Leroy Robinson, lecturer on practical pharmacy H A Huland, assistant demonstrator of anatomy J T McCarthy, lecturer on diseases of the skin N J Kasten, lecturer on histology and bacteriology M J Kelley, demonstrator of pathology Edward C Moriarity, assistant demonstrator of pathology J J Valentini, lecturer on diseases of nose, throat and chest Geo W Lautenbach, assistant to the chair of nose, throat and chest W J Chappell, lecturer on diseases of nervous system George A Strauss, lecturer on applied therapeutics Thos A Poole, assistant to chair of eye and nose —*Baltimore News*

Presumption as to Qualification of Physician—The rule seems to be that, when the question of license arises collaterally in a civil action between the physician and one who employs him, due qualification under the statute will be presumed, and the burden of proof is upon him who denies such license So says the supreme court of Iowa, in the late case of Kossuth County But when it comes to proving the incompetency of a physician, as of one employed by the board of supervisors to furnish poor persons in the county with medicine and medical aid, so that another physician employed by the township trustees to attend a pauper may recover of the county therefor, the court holds that the same rule applies as where the character of a person is directly in issue, and that the evidence must be confined to general reputation, and particular acts or specific facts are not admissible And under this rule, the mere individual opinion of the witness is not admissible, and no one will be permitted to speak affirmatively to the character or competency of another, as distinguished from general reputation, solely from rumors or reports The court can not try collaterally each and every case tending to show the ability or competency of the person whose skill is the subject of inquiry, and, before one is permitted to speak of the character or competency of another, knowledge must appear

The National Relief Committee on Pure Water for Troops—The National Relief Committee, through Dr E O Shakespeare, the chairman of its committee on sanitation, has issued a pamphlet address under the title of "Pure, Wholesome Water for all Troops" in which, after showing what has been done by the Surgeon General and the Quartermaster General of the Army to provide germ free filtered water for a certain portion of the army, it urges the necessity for boiling all water not thus filtered It then discusses the necessity for aërating the boiled water to render it palatable and makes various suggestions for accomplishing this The Committee has adopted the following resolutions

WHEREAS, in the opinion of the Executive Committee of the National Relief Commission, the supply of the American Armies with germ free and palatable drinking water is so essential to the maintenance of the health and strength of the men,

Resolved, That the action of the Government in providing the means of furnishing 50,000 of our troops with germ free drinking water should be most heartily commended, but we would at the same time most earnestly urge upon the responsible authorities at Washington, the necessity of providing, at the earliest possible moment the means of furnishing the remainder of our armies, namely the other 200,000 men, with equally wholesome quality

Resolved, That this body hereby expresses its willingness and desire to co operate in such an effort to the extent of its ability and in any manner possible

In carrying the last resolution into practical effect the committee on sanitation has communicated with commanding and sanitary officers of armies in the field, inviting attention to the necessity of boiling and aerating the water supplies of camps, and requesting their views as to the best methods of effecting the purification of natural waters Meanwhile, it has sent a special commissioner, Mr Louis C Vanuxem, to Porto Rico with supplies for the benefit of the hospitals there, and in view of the probable need for apparatus for purifying the drinking water, it proposes sending facilities for furnishing 5000 men with wholesome and palatable water, irrespective of the original quality of the natural supply The apparatus comprises fifty water boilers, each encased in a removable wooden box for safe transport. Each boiler is about 20 by 11 by 13½ inches, fitted with hinged handles for convenience of transportation and with a rose sprinkling attachment, by passing through which the boiled water, when cooled, may be aërated to ensure palatabilty A suggestion is made that this aëration may be effected by pumping air through a rose nozzle from such a pump as is used to inflate bicycle tires

Standard Medical Works as Evidence—The theory of the plaintiff in the recent personal injury case of Bixby vs the Omaha and Council Bluffs Railway and Bridge Company, was that he had received a serious shock to his nervous system in a collision of street-car and railway train, and had symptoms indicating locomotor ataxia or some neurotic trouble, although at the time of the trial there was no objective or external evidence of any injury One physician testified to such symptoms, while three others insisted that there existed no signs of any disease Then the plaintiff was permitted, over the objection of the defendant, to read in evidence extracts from a number of admittedly standard medical works, the portions read to the jury treating of the symptoms, and not the cure, of diseases But the supreme court of Iowa holds that this was reversible error It says that the question is not whether the courts will use the helps of science in the investigation of truth There is no controversy on that score The authorities are agreed that the truths of the exact sciences, the established facts of history, and computations from fixed data may be proven by the works of reputable authorities This is on the ground that all men assent to their correctness But it points out that medicine belongs to the class known as inductive sciences The data are constantly shifting with new discoveries, and the conclusion which may be considered sound today is repudiated tomorrow A medical work may be standard this year, and obsolete next And even the opinion of the same author changes in the different editions, owing to new discoveries and a better unerstanding of symptoms These facts, with the added one of difficulty often experienced by those learned in medicine to determine from the books the nature and extent of injuries and diseases, the court insists, emphasize the necessity of cross examination and the use of an oath, not only that the theory contained in the books may be known and understood but that practical skill may apply the science of medicine in each case Nor does it consider that the admission of medical treatises is authorized by section 4518 of the Iowa code, which says "Historical works, books of science and art, and published maps or charts, when made by persons indifferent between the parties, are presumptive evidence of facts of general notoriety of interest therein stated " But the court suggests that the same reasoning does not apply to a case where a physician is employed to treat a patient according to a certain system, so that, in determining whether he has in fact followed that system, the books from which physicians of that school are shown to have derived their knowledge may be admissible, for these expound the very principles which he is alleged to [illegible] violated, and, under the circumstances, the books themselves would be better evidence than quotations from them [illegible] in Alabama alone, it is said, are medical works received in evidence for general purposes

Hospitals

The new Sternberg hospital only a short distance from Lytle Ga was thrown open for the reception of the sick at Camp Thomas, August 16 The hospital has accommodations for 1200, and a corps of Red Cross nurses is in attendance

Otto Young has donated a $50,000 building, fully equipped, to the Chicago Home for Incurables as a consumptive ward

Societies

The following recent meetings are noted

Indiana —Southern Indiana Medical Society, Indiana Springs, August 12

Iowa —Southwestern Iowa Medical Association, Council [illegible]lls, August 18

Michigan —Grand River Valley Medical Society, Holland, August 9

Ohio —Muskingum County Medical Society, Signal, August 11

Pennsylvania —Cecil County Medical Society, Perryville, August 12, Lycoming County Medical Society, Williamsport, August 12

Virginia —Richmond Academy of Medicine and Surgery, August 9

Louisville

Rodman —Dr Wm L Rodman, former Professor of Surgery in the Kentucky School of Medicine, will remove September 1 to Philadelphia, where he goes to accept the chair of Surgery in the Medico-Chirurgical College Dr Rodman filled the chair during the last college term, but returned to Louisville at the conclusion of it, he now goes permanently

Novel Experience.—Dr S J Meyers, at home on sick leave from his post at Camp Thomas Division Hospital, relates the following experience, which is decidedly original and uncommon in army hospitals He had hardly been in the camp two hours when he had delivered a woman of a premature fetus Standing at headquarters a soldier rode up in great haste stating that a woman was dying in another part of the camp, and soliciting medical aid The Major commanding the hospital sent Dr Myers with instructions to do all he could for the patient without assuming any responsibility The Doctor found one of the actresses at the camp theater in labor, and delivered her in a few moments of an eight months' fetus which was dead The mother stated she did not know she was pregnant and had not lost a moment's time from her work to the time of her delivery A labor case in an army camp of 45,000 men is something of a novelty

Washington

Health of the District —The report of the health officer for the week ended August 13 shows the total number of deaths to have been 96, of which number 51 were white and 45 colored The principal causes of death were Nervous diseases, 13, heart diseases, 7, intestinal, 4, respiratory, 17 There were 2 deaths from diphtheria and 1 each from measles and typhoid fever At the close of the week there were 28 cases each of scarlet fever and diphtheria under treatment

Physicians to the Poor.—Drs H T Harding and P C Hunt have been appointed physicians to the poor, at a salary of $30 per month Dr E A Gorman has been appointed resident physician of the Washington Asylum, vice S C Johnson resigned Dr J Spence Hough of the health office, who was appointed a surgeon in the navy for duty on the steamer *Morrill*, has been granted indefinite leave of absence by the district commissioners

Phsicians Licensed —The following named physicians, having successfully passed the District examination, have been licensed to practice by the Board of Medical Supervisors Drs Jesse Lee Adams, Jr, John R Atwell, George Kasper Baier, Wm Mitchell Barnes, Levi C Blake, Martha Clark Burritt, Wm J Bush, John A Clark, Carl A Clemons, Elmon A A Cook, Thomas Dowling, Jr, Wm N Fisher, A F Foy, Julia M Green Thomas A Groover, Carl D Haas, Stuart C Johnson, Carl S Keyser, Robert S Lamb, W R Rives, Jr, Lewis Albert Walker, Charles S White and Wm E Whitson

Army Appointment —Dr William E West of New York, resident physician at Columbia Hospital and late resident physician at the Central Dispensary and Emergency Hospital, has been appointed an Assistant Surgeon, U S A, for duty at Porto Rico on the U S ship *Florida*

Washington Training School for Nurses —The Washington Training School for Nurses will hereafter be operated in conjunction with the Emergency and Alms House Hospitals Congress has appropriated $6,000 for a nurses' home to be established at the Alms House Hospital grounds Application for admission to the school for free instruction will be received at either institution, or by Dr H L E Johnson, Dean

Central Dispensary and Emergency Hospital —The hospital has recently suffered great loss in the death of Dr George Byrd Harrison, a member of the Board of Trustees, and one of the consulting staff Dr Harrison formerly had charge of the Department of General Disease The medical staff called a special meeting and adopted appropriate resolutions of regret Mrs Phebe Hurst has donated a large building and grounds opposite the hospital to be used as a nurses' home for the ins[illegible]on. The [illegible] was made Burnett, who is [illegible] ne [illegible] ratio it will be form[illegible] d [illegible] r for necessary repairs to the hospital and the work is being pushed with dispatch In order to prevent overcrowding and imposition on the hospital, the Board has agreed to charge $15 a week to those able to pay for board This is in line with the wishes of the Medical Association

Headquarters for the Red Cross —Dr J Ford Thompson has tendered the use of house 1310 G Street to the American National Red Cross Society as a headquarters for their committee The offer has been accepted and the committee has raised the Red Cross flag over the building

Gift of the Red Cross —Surgeon General Sternberg has acknowledged the receipt of $5000 from the supply committee of the Red Cross Society, which he will distribute He will send $1000 to Colonel Forwood, chief surgeon at Montauk Port, $1000 to Colonel Harvard at Santiago, $1000 to Colonel Greenleaf, chief surgeon on General Miles' staff at Porto Rico, $1000 to Leutenant-Colonel Hoff, chief surgeon at Chickamauga, $500 to Major Hale, in charge of the U S Hospital at Ft. Thomas, Ky , $500 to Major Fay, in charge of the U S Hospital at Ft McPherson, Ga , all of which will be used for the purchase of delicacies for the sick and wounded soldiers who are arriving at these points

Isolation Hospital Plan — The district commissioners have appointed an additional architect to assist the inspector of buildings in the preparation of plans for the construction of an isolating building on the grounds of Providence Hospital for the reception of minor contagious diseases The entire cost of the building is not to exceed $25,000

Hospital for Foundlings —The superintendent of the Washington Hospital for Foundlings has submitted the yearly report to the district commissioners The average number of children cared for this year has been larger than any year since its organization in 1887 The total number in hospital June 30, 1898, was forty six, and forty four received during the year Thirteen were adopted by outsiders, nine died and four were transferred to other institutions Mal nutrition caused the greatest number of deaths The total receipts of the year were $11,485 88, total expenditures, $7449 48, leaving a balance of $4036 40

The New Morgue —The coroner, Dr Wm P Carr, reports that the new morgue for the District will shortly be completed The morgue will not compare favorably with morgues of other large cities, but it will be a great improvement on the old shed in the rear of the station house, previously known as the morgue It is to be but a one story building, with only two rooms, but will be fitted out with ice boxes and other necessary paraphernalia to the extent of the parsimonious appropriation for that purpose

Georgetown University Hospital —The Committee of Administration of the Georgetown University Hospital, consisting of Drs J T Johnson, S S Adams, George T Vaughn, Chas Klineschmidt and Geo M Kober have announced, by circular, the formal opening of the hospital for the reception of patients The free beds are for the benefit of indigent sick, but evidence of dependency must be furnished in accordance with the rules of the Medical Association of the District of Columbia before admission is granted Seven rooms have been fitted up for the accommodation of pay patients, and the privilege of attending private patients in these rooms is extended to all members of the Medical Association and to surgeons of the Army and Navy and Marine Hospital service The hospital will have in addition a well equipped emergency and dispensary department

Philadelphia

Will of Dr Pepper.—The will of the late Dr Pepper was admitted to probate a few days ago It was drawn up in February last and is very short, covering three typewritten pages. The actual value of the estate is unknown, personal property $100,000, and real estate $20,000, being only nominal items to comply with regulations concerning the fees of the register It is known that Dr Pepper carried heavy life insurance, and it is the prevailing belief that the entire estate will approximate a million dollars Four executors were chosen his widow, Mrs Frances Pepper, his eldest son, Dr William Pepper, his nephew, George Wharton Pepper, and his brother in law, James B Leonard After the provision that his brain be given to the anthropometric society and his body be cremated, the other provisions concern the real estate and personal property to be divided between his wife and three sons.

Dr. Pepper's Successor —While discussion of Dr Pepper's successor at the University of Pennsylvania may not be with good grace, since the time of his death has been so short, yet there is some speculation going on regarding the one upon whose shoulders the mantle of the distinguished teacher and clinician will fall It appears that there are several being mentioned for the chair, but matters have not progressed far enough to say with any reasonable certainty as to who it will be Of those mentioned, the names of Dr William Osler and Dr James Tyson seem to be most prominent. It will be remembered that Dr Osler once occupied the chair of clinical medicine in the University of Pennsylvania, but subsequently accepted the chair which he now holds at the Johns Hopkins Dr James Tyson succeeded Dr Osler as professor of clinical medicine at the University, and as he has filled this chair for the past four years, therefore becomes the logical successor of Dr Pepper Dr Tyson has been connected with the University almost since he was graduated in 1863, first as lecturer in microscopy (1868) and in chemistry (1870), and later professor of microscopy and physiology in the Pennsylvania College of Dental Surgery In 1874 he became lecturer on pathologic anatomy, and in 1889 succeeded Dr Osler in the chair of clinical medicine It is a question whether or not Dr Osler would be willing to give up his chair at the Johns Hopkins to accept the chair at the University of Pennsylvania. Provost Harrison is reported as saying "The trustees will not meet until October, and it is impossible to say with any accuracy who will be chosen as Dr Pepper's successor I would not want to discuss the question now "

Sick Soldiers of Pennsylvania —It is proposed to bring back all those patients now ill with typhoid fever and other diseases, to Philadelphia, where they may be placed in suitable hospitals The University Hospital, Episcopal Hospital, Pennsylvania Hospital, German Hospital and St Ayers Hospital, have tendered their beds free of charge for the treatment of these cases To bring the cases home a complete hospital train has been fitted up by the Pennsylvania Railroad Company, consisting of eight coaches, of which five were fitted up as hospital cars with a capacity of 100 patients, two Pullmans, to be used a dining and sleeping car by the physicians and nurses The train will be in charge of Drs Carl Freese of the German Hospital, Henry Sykes of the Episcopal Hospital, George Pfroenm of the Medico Chirurgical Hospital, and Wilmer R. Batt of the City Council with a full corps of nurses The University of Pennsylvania claims priority over all others in tendering its services to the Government, Provost Harrison having written to Governor Hastings to that effect April 29

Yellow Jack and Philadelphia.—Aside from the precaution exercised by the city and State, the United States government is under existing laws taking precautions against the introduction of yellow fever into Philadelphia and other cities A few days ago an inspecting party left this port on the "floating" quarantine station *Protector*, built for the purpose of preventing the entrance of yellow fever into this city The *Protector* was taken to Fort Pond Bay, near Montauk Point, where it will remain under the charge of Dr J J Kinyoun, bacteriologist of the Marine Hospital Service It is the intention to destroy all germs of yellow fever by thoroughly disinfecting the baggage of every soldier coming into port, also to cause a reasonable detention of the person before mingling with those who have not been in infected areas The vessel is built of steel, 150 feet long, over 20 feet beam and without propelling machinery The cost of building of the vessel, apparatus, etc , was about $50,000

Prevention of Tuberculosis —Judging by an editorial which recently appeared in one of the lay papers here, the people are gradually learning that prevention is the best means of stamping out that disease Frequently we hear it stated that tuberculosis is gradually becoming more prevalent in the larger cities, but this does not apply to Philadelphia On the other hand, the statistics prove that deaths from that disease are gradually growing less For instance, in 1892 deaths to 1000 persons living was 2.480 , in 1895, 2.104, and in 1897, 1.966 This reduction in the number of deaths from tuberculosis in Philadelphia is attributed to the good work of the Pennsylvania Society for the Prevention of Tuberculosis, under the supervision of Dr Flick, who located infected areas and infected houses throughout the city in 1892 The paper then speaks of ways of preventing the disease, such as through the inspection of food supplies, suppressing the habit of expectorating along the public highways, and taking the necessary precaution in those houses infected by tuberculosis As a further method of suppressing the disease, it is recommended that a State sanitarium be built where these cases might be treated under the care of those most competent to render effectual aid

Ptomain Poisoning —Two families are seriously ill with symptoms of ptomain poisoning derived from ham One, the Cortledge family, is composed of the father, mother and two year old child , the other of two boys, aged 12 and 3 years, respectively, and a girl, aged 21 months On the 15th both families ate boiled ham for supper (bought at the same store) and at 11 o'clock Mr Cortledge and child were seized with violent abdominal pains, accompanied by vomiting The mother was only slightly affected It was subsequently learned that the other family were similarly affected, and two physicians pronounced the cases ptomain poisoning The ham had been boiled by the manufacturer in this city, but those who had prepared the food for market could not be found Samples of the food are being examined

Mortality Report —For the week ending at 12 o'clock, August 15, 443 deaths had been reported to the Board of Health This shows a decrease of 41 over the previous week and of 37 over the number for the corresponding period of last year Of the total number of deaths, 164 occurred in children under five years of age The principal causes of death were Nephritis, 18 , cancer, 14 , cholera infantum, 57 , phthisis, 52 , dysentery, 4 , marasmus, 24 , paralysis, 8 , suicide, 2 , whooping cough, 3 , sunstroke, 9 , heart disease, 20

Infectious Diseases —This week Diphtheria, 16 deaths and 45 cases , scarlet fever, 1 death and 10 cases , typhoid fever, 78 cases and 8 deaths Last week Diphtheria, 2 deaths and 49 cases , scarlet fever, 25 cases , typhoid fever, 13 deaths and 60 cases

Result of Examinations – The report of the examinations of the last meeting of the State Medical Board has just been published and the following results are tabulated

	No examined	No rejected	Per cent of rejections	General average
University of Pennsylvania	93	1	01 0	83 63
Medico-Chir Col., Philadelphia	76	8	10 5	78 84
Woman's Medical Col Phila	26	1	03 9	78 68
Physicians and Surgeons Baltimore	2	1	50 0	76 71
Jefferson Medical College	20	5	25 0	74 73
Western Pennsylvania	21	8	38 1	72 39
Miscellaneous	53	17	32 1	75 61
Total	316	47	14 9	78 77

The honors in this examination were held by the University of Pennsylvania and the Medico Chirurgical College of Philadelphia, the University leading, as it generally does The Medico Chirurgical College, however, made a good average for the hospitals here and captured one-half of the positions on the resident staff of the Philadelphia Hospital

Infected During a Surgical Operation —Dr Emil Dippell, chief resident surgeon at St Timothy's Hospital, while assisting in an abdominal operation on July 4, inoculated himself with infected material, near the nail on the left hand A localized abscess formed but was relieved by an operation Subsequently another abscess developed in the left axilla and the Doctor can only be relieved by another operation

Almshouse May Be Enlarged —The Board of Charities has recommended that councils appropriate $60,000 to be expended in repairing and otherwise making room for the care of patients now in this institution At present there 1355 insane patients being treated in the buildings, which are greatly overcrowded

Rough Riders at the University Hospital.—Alfred Roey, a Cuban, Percy Geyer of Colorado and Joseph Adkins of Colorado, were taken ill on their way from Tampa to Montauk Point, the quarantine station, recently, and were transferred to the University Hospital

Will Inspect Army Camps —Dr E O Shakespeare of Philadelphia, member of the Sanitation Committee of the National Relief, has been commissioned to head a council, whose duty it shall be to inspect the various United States Army Camps and to better matters where unsanitary conditions are found The National Relief Association recently issued an earnest appeal for funds to support its work, both in the States and in the field, with very good results It is stated that this special board has been created to render void the necessity of red tape methods at the different departments at Washington, and that matters will receive attention with much greater dispatch. Remembering that typhoid fever and preventable diseases have been on the increase from the time that soldiers were first put into camps, it seems just a little strange that some one was not sent to these places long ago , but as health matters are usually those which receive attention last, and since the war is over, these things may be now considered When unsanitary conditions are found, Dr Shakespeare will at once telegraph to Washington, and all measures likely to bring about disease will be corrected immediately

Philadelphia Somewhat Unclean —During the recent inspection for any latent case of yellow fever which might have crept in unawares, certain districts along the Delaware were found in unsanitary condition Chief Nuisance Inspector Kennedy presented his report to the Board of health a few days ago, stating that 3673 premises had been visited and rigorously inspected and that 704 nuisances were discovered

Expert Testimony —Dr Charles K. Mills of the University of Pennsylvania has been called to Lancaster, Pa , to give expert testimony in the Wireback murder trial

Philadelphia Polyclinic —The fifteenth annual report of this institution shows that during the year 92,564 visits were made to the dispensary and 634 operations were performed under ether Miscellaneous contributions during the year amounted to $7,500 and a State appropriation of $2,500 was received The operating expenses were $41,824 23 , receipts $41,152.88 To this must be added $10,725 46, being the amount of floating indebtedness on Jan 1, 1897, which makes the total floating indebtedness of the institution on Dec 31, 1897, $11,406 81

THE PUBLIC SERVICE

Memoranda Relating to Operations of the Medical Department, U S A —Medical Officers —The number of medical officers allowed by law is inadequate in times of peace The total number allowed is one hundred and ninety two There are at present thirteen vacancies The administration of the Surgeon General's Office and the Army Medical Museum requires six Eleven are on duty at medical supply depots and as chief surgeons of military departments One is at the Soldier's Home , fifty six are at general hospitals, on hospital ships, and at garrisoned posts Four have been disabled during the war by sickness Five are on duty as chief surgeons of army corps This leaves ninety six medical officers available for duty with troops in the field Of these, thirty five have been appointed brigade surgeons of volunteers, and are distributed among the various army corps

This deficiency in regular medical officers has made it necessary to employ nearly four hundred contract surgeons, and more are being employed every day Most of these doctors from civil life are doing good service, and many of them are thoroughly well equipped physicians and surgeons, with ample hospital experience , but it has been impossible to make a careful selection, owing to the great pressure of in the geon General's Office, and the urgency has has not been practicable to have upon their qualifications

In addition to this, there have been dent eight brigade surgeons with colonel, twenty four division surgeons and sixty five brigade surgeons, also three medical officers for each of the regiments of U S Infantry, Cavalry and Engineers All volunteer regiments have three medical officers appointed by Governors of States

General hospitals have been established at Key West, Fla, with a capacity of 755 beds, at Fort McPherson, Ga, 1050, Fort Thomas, Ky 432, Chickamauga Park (Leiter Hospital), 255, Fortress Monroe, Va, 535, Fort Myer, Va, 308 In addition to this, several hundred sick and wounded soldiers have been placed in the Marine Hospital on Staten Island and in civil hospitals in New York and Brooklyn, also nearly two hundred in the civil hospitals in Charleston, and a smaller number in civil hospitals in various parts of the country

The Hospital Train, which was equipped for service June 22, and consists of ten tourist sleepers and a dining car, has made repeated trips from Camp Thomas, Tampa and Fernandina, with sick, to the general hospitals at Fort McPherson and Fort Thomas, and has proved to be most useful

The Hospital Ship *Relief* was purchased May 18, but owing to delays in preparing her for service, did not sail from New York until July 2 Four days later she arrived at Siboney with an ample supply of medical stores of all kinds and with sixteen doctors She returned to New York with a load of wounded and was then dispatched to Porto Rico She is now returning to New York with 260 sick and wounded soldiers

The Hospital Ship *Olivette* went with the [illegible]h Army Corps from Tampa, Fla, to Santiago and brought a load of wounded from that port to New York She returned to Santiago with supplies and is now en route to New York with 200 patients

MEDICAL SUPPLIES —When the troops were originally ordered from their respective posts into the field each regiment was required to take with it medical and surgical chests, litters and field supplies for three months Afterward, medical supplies in ample quantities of all kinds were sent to Tampa for the Fifth Army Corps, about to sail for Cuba, and supplies have subsequently been sent to the several camps that were formed, wants being anticipated as far as possible and requisitions approved promptly on receipt

Supplies for the army have been furnished from three medical supply depots New York, St Louis and San Francisco, the latter supplying very largely, by purchases on the Pacific Coast, the troops that went to Manila St Louis depot supplied the camps and regiments in the Mississippi Valley and the West, and the New York depot the camps and expeditions fitted out from the Atlantic Coast

In addition to general medical supplies in great variety, 1204 medical and surgical chests have been issued, the surgical chests containing surgical instruments and dressings especially designed for the relief of wounded on the battlefield

The extent of the demands upon the medical supply depots is indicated by the following figures, showing the issue of some of the more important articles

First aid packets	No	272,000
Hospital corps pouches		5 797
Orderly pouches		509
Pocket cases		9[illegible]2
Surgeon s field cases		369
Field operating cases		328
Medical and surgical chests		1 201
Litters		2 2[illegible]0
Litter slings		7 600
Cots and bedsteads with bedding		18 185
Blankets gray		23 9[illegible]0
Field desks		440
Quinin pills		7 300 000
Chloroform and ether	botts	13,220
Gauze sublimated 1 meter pkgs	Pkgs	100 000
Gauze bandages 3 sizes	No	331 770

SICK AND WOUNDED —At the present time, August 15, we have a full record of 40,620 cases of sickness and wounds that occurred among a mean strength of 154,028 men, during the months of May, June and July As the average of the 3 months probably 6 per cent of the troops were constantly sick Reports from commands not yet represented in the statistics are expected daily

HOSPITALS CORPS —Immediately at the outbreak of the war the Hospital Corps consisted of one hundred hospital stewards, one hundred and three acting hospital stewards and five hundred and twenty privates, making a total of seven hundred and twenty three The larger part of this number was ordered with the troops that left their respective stations to the camps of concentration and accompanied the regular regiments in the 5th Army Corps to Cuba, the smaller part being left behind at the various Army Posts, they being just enough to take care of the medical property

Enlistments were at once ordered throughout the country of suitable men for the Hospital Corps, special attention being paid to enlisting nurses, pharmacists, cooks, drivers, mechanics, etc. A good many medical students and young physicians were also accepted.

By means of enlistments and afterward by transfers volunteer regiments to the Hospital Corps a large number men were obtained, and today there are in service by a count five thousand and eighty four Probably a thou are in service whose enlistment and transfer is not yet re

In addition to the members of the Hospital Corps for the purpose of taking care of our sick and wounded, have employed 141 male nurses and 386 female nurses un contract

CIRCULAR No 6 —

WAR DEPARTMENT, SURGEON GENERAL'S OFFICE,
WASHINGTON, Aug 12, 1898

Chief surgeons of army corps, of divisions and of smaller independent commands are expected to make timely requisition for medical supplies It must be remembered that some delay is often unavoidable in putting up supplies at the supply depots and in their transportation to the point at which they are needed In an unexpected emergency telegraphic requisition must be made and supplies will be sent by express, but it must be remembered that this mode of transportatio very expensive and that failure to make requisition in adva of immediate needs entails unnecessary expense upon Government Division and field hospitals in which typh fever and other serious cases are treated should be libe supplied with all articles necessary for the treatment comfort of the sick The field supply table applies only to mobile commands and division hospitals to accompany them on short notice

GEO M STERNBERG,
Surgeon General, U S Army

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